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Web 2.0 Tools Improve Teaching and Collaboration in High School English Language Classes

Mahmud Shihab
Nova Southeastern University, mahmudshihab@gmail.com

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by

Mahmud M. Shihab

A dissertation submitted in partial fulfillment of the requirements
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in
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We hereby certify that this dissertation, submitted by Mahmud M. Shihab, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

_____ _____

Gertrude W. Abramson, Ed.D. Date
Chairperson of Dissertation Committee

_____ _____

Helen St. Aubin, Ph.D. Date
Dissertation Committee Member

_____ _____

Martha Snyder, Ph.D. Date
Dissertation Committee Member

Approved:

_____ _____

Edward Lieblein, Ph.D Date
Dean, Graduate School of Computer and Information Sciences

Graduate School of Computer and Information Sciences
Nova Southeastern University

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An Abstract of a Dissertation Submitted to Nova Southeastern University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Computing Technology in Education

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Web 2.0 tools, namely blogs, wikis, podcasts, and RSS were introduced to change teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom. Two high school teachers of English language and their classes participated. The teachers were interviewed about their current teaching practices and provided with training to develop teaching units that use Web 2.0 to engage students as active collaborators in their learning. They integrated blogs, podcasts, wikis, and RSS into their teaching. Additional interviews were conducted during and after the implementation stage. Implementation strategies, changes in teaching practices, challenges encountered, and the impact on student interaction and collaboration were closely examined. Students were surveyed at the conclusion. Teachers found that Web 2.0 tools made them more efficient in teaching. Blogging was the most powerful tool for journal writing and sharing ideas. Wikis were more difficult to use but were useful to facilitate group planning and collaborative construction of knowledge. Podcasts were useful for publishing audio recordings of interviews, speeches, and poetry recitals. RSS feeds made it easy for teachers and students to track updates on websites, posts on blogs, collaborations on wikis, and audio recordings on podcasts. Both teachers and students enjoyed the interactions and collaboration that took place in the English classroom using Web 2.0 tools.

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Chapter 1

Introduction

International College (IC) is an independent, non-profit, K-12 international school established in 1981 and is situated on the campus of the American University of Beirut. IC is accredited by the New England Association of Schools and Colleges (NEASC) and the European Council of International Schools (ECIS) and is also authorized by the International Baccalaureate Organization (IBO). English is the main language of instruction and communication in a community of over 3,400 students coming from 24 nationalities (International College, 2007a). IC provides fast wired and wireless Internet connectivity to students and teachers using over 700 computers available in fixed and mobile setups in computer labs, libraries, teacher work areas, and classrooms.

In contrast to the way students are learning today in the Information Age, traditionally, students were treated as consumers of information coming mainly from textbooks. In most subjects, students were taught to read information written in static textbooks and materials handed to them by teachers. They used to take notes on copybooks and teachers always checked the neatness of their work (Warlick, 2004). Even though today's schools have become more technologically sophisticated, they remain one step behind students (Losinski, 2007). Today's students have access to global, interactive, and multimedia rich electronic resources. They use computers and mobile devices to

access the Internet to solve information challenges and construct compelling products through text and a variety of digital media for a world wide audience. Today's generation is the "Net Generation" (McNeely, 2005). Many children arrive at school as comfortable computer users having been online at sites such as http://www.sesamestreet.com and http://www .noggin.com. These sites offer engaging digital media and educational games that are attractive to youngsters.

Recognizing these facts, the national standards for the English Language Arts set by the National Council of Teachers of English (NCTE, 2007) encourage the development of creative and instructional practices that make a productive use of *newly emerging literacy abilities that children bring to school*. Standard 8 emphasizes that students should collect, analyze, synthesize, create, and communicate knowledge using a variety of technological and information sources. Standard 11 encourages students to be active participants in a variety of literacy communities using critical, knowledgeable, creative, and reflective skills.

As a reform initiative in educational technology, the International Society for Technology in Education (ISTE) established the National Educational Technology Standards for Teachers (NETS-T) that are now adopted by all U.S. states and many countries (ISTE, 2007a). NETS-T set standards for teachers to be proficient in using technology in teaching. Teachers are expected to plan strategies to enhance teaching and learning in a technology-enhanced environment (ISTE, 2003).

The current, Net generation, high school students rarely have the opportunity to experience the latest in interactive web technologies in a teaching and learning context since these technologies are new to current teachers who rely on traditional methods of

teaching and interaction with students (Oblinger & Oblinger, 2005; Warlick, 2005a; Richardson, 2006; Losinski, 2007).

Problem Statement

Current teaching practices lack the interactive technology that engage today's students and allow them to be active contributors in collaborative activities. According to Hardman and Carpenter (2007) many schools are *out of sync* with the technology available to students in the real world outside their schools. The current generation of high school students possesses a superior level of familiarity with interactive web applications than that of the current generation of *digital immigrant* teachers (Oblinger & Oblinger, 2005). Teachers need to modify their teaching practices to integrate critical thinking and authentic literacy skills using 21st century technology tools in an effort to develop challenging and interactive learning environments that meet the digital lifestyle of the millennial generation of high school students (Warlick, 2005a).

Current Web 2.0 technologies, including blogs, wikis, RSS, and podcasts, pose a major challenge to education. With our students' access to these collaboration tools of the *Read/Write* web, teachers have to revisit the strategies used in teaching. Teachers have to rethink the way information is processed and evaluated, the way the curriculum is delivered, and the scope of learning outcomes now that students have the ability to reach audiences outside of their school community. Teachers should evaluate the effect of these tools on our notion of *literacy* especially that current students are not only readers, but also writers, collaborators, and editors of online information (Richardson, 2006).

Goal

The goal was to examine how Web 2.0, including blogs, wikis, RSS, and podcasts, can change teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom. Teachers were trained to develop teaching units that use Web 2.0 to engage students as active collaborators in their learning. The implementation strategies, changes in teaching practices, challenges encountered, and the impact on student interaction and collaboration were evaluated. Teachers integrated blogs, podcasts, wikis, and RSS into their teaching in an attempt to enhance delivery of instruction. Web 2.0 tools also allowed students to express their ideas compellingly to a global audience in a positive, productive, and personally meaningful way.

Current high school students have actively used and participated in Web 2.0 sites including social bookmarking sites, wikis, blogs, and podcasts. Students can read, contribute, edit, and become members of virtual communities (Richardson, 2006). According to Prensky (2001a), there is a growing gap between *digital natives,* the generation of students who have been exposed to digital technologies from birth, and *digital immigrants,* the generation of adults who adopted technology later in their lives. These Web 2.0 tools have the potential to close the gap between these two generations because they are mostly free to access and easy to use (Richardson, 2006).

This study established research-based strategies about using Web 2.0 to make teaching more relevant to the lifestyle of today's digital native students and to improve their collaboration level in learning. The findings may inspire further research on the use of Web 2.0 tools in K-12 education.

Research Questions

Two areas of inquiry were addressed:

Teaching Practices

1. How can Web 2.0 (blogs, wikis, podcasts, and RSS) be integrated into teaching practices of English language teachers?
2. How must teaching practices change to accommodate Web 2.0?
3. Which Web 2.0 tools offer greatest academic potential? Why?
4. What modifications must be introduced to improve the process?

Student Collaboration Behavior

5. What are the collaboration patterns of student use of Web 2.0 tools outside of the classroom?
6. How would student use of Web 2.0 tools within the classroom affect their attitude toward learning and engagement in class activities?
7. What are the observable outcomes of student use of Web 2.0 tools?
8. What future potential could be identified from this study?

Relevance and Significance

International College (IC), a K-12 school in Beirut, Lebanon is one of the oldest international schools in the world. It was established in 1891 and is now accredited by the New England Association of Schools and Colleges (NEASC) and the European Council of International Schools (ECIS). IC prepares students to become life long learners as clarified in its mission statement (International College, 2007b). The academic program at IC places emphasis on effective communication, creative expression, and community building through innovative methods of instruction. The process of accreditation has placed high expectations on using computers as learning and productivity tools in the daily work of students. According to Sharp (2004), computing technology has a great

potential that can positively impact student learning when integrated with teaching practices. The challenge of keeping up with new developments in technology point to the need for changes in teaching practices and the way students learn. Oblinger and Oblinger (2005) point out that the current generation of high school students possesses a superior level of familiarity with interactive web technologies than that of their teachers. Warlick (2005a) demands that current teachers need to modify their teaching practices by integrating 21st century technology skills in their lessons to develop challenging and interactive learning environments that meet the digital lifestyle of the millennial generation of high school students.

Although teachers have been successful in using traditional methods of instruction over the past decades, the challenge to meet the technological demands of today's generation of students necessitates serious investment in exploring new technologies that offer the potential to engage students in active learning and collaboration (Oblinger & Oblinger, 2005). Today's developments in Web 2.0 technologies provide the promising tools needed to meet the current needs of millennial students (Richardson, 2006).

Scope of the Study

There were two *limitations* that were beyond the researcher's control and that might have affected the outcomes:

1. Although computers and laptops were accessible to all students, some students had more abundant access to the Internet through personal wireless devices like mobile phones and Portable Digital Assistants (PDA) than others. All students were encouraged to use any available Internet connection whether at school or at home. All students reported that they managed to access the Internet from home.

Access to podcasts was problematic for some students due to the bandwidth required to access audio recordings.

2. Although the participating teachers were very excited about being part of this research project, they were not compensated for extra time and effort they need to learn about and implementing Web 2.0 into their teaching. On the other hand, they have confirmed that they will use Web 2.0 tools in their future classes.

There were two *delimitations* that were beyond the researcher's control and that might have affected the outcomes:

1. Both students and teachers participating in the study were well skilled in using computers and the Internet; therefore, the outcomes might not be typical in other classes with different teachers and students.
2. Web 2.0 tools are fairly new on the Internet. Their specifications and capabilities have been changing with time; therefore generalizations made in this study may only apply to the current era of the Internet. Many new features have been recently added to the blogging tool used in this study. Web 2.0 tools are new and in constant development; therefore, they are expected to reach a higher level of sophistication in the near future.

Definitions and Acronyms

At-risk – Students may be at-risk if they are earning low test scores and are not meeting the school academic or discipline standards (Author).

AUP – An Acceptable Use Policy is set by community leaders to define acceptable behaviors and practices in a network environment. It also includes rights, privileges, and restrictions related to accessing the Internet (Author).

Blog – A blog, short for *web log*, is the easiest web publishing tool that allows users to create personal journals and resource sites to share with their colleagues and the global community. Blogging requires no knowledge of how to code HTML pages or to use file transfer protocols to publish content. Set in a user-friendly diary format rather than a threaded discussion board format with separate postings, the blog quickly develops into a permanent webpage that can be visited by a worldwide community (Richardson, 2006).

Cloud Computing – A new computing environment in which software applications run on web servers rather than personal computers. Using any Internet-enabled device, users can connect to these applications and use them when needed (Weber, 2008).

Collaboration/Communication - For the purpose of this study, the term collaboration is used when there is a joint intellectual effort to create a certain product. In contexts where users are exchanging ideas without creating a final product, the term communication is used instead (Author).

Differentiated Instruction - Differentiated instruction requires teachers to diagnose student strengths and weaknesses and choose the appropriate teaching strategies and content to meet the learning needs of every student (Tomlinson & McTighe, 2006).

Digital Immigrants - Digital immigrants are computer users who have invested in adopting digital technologies into their teaching practices. They used the Internet to provide resources to students (Warlick, 2005a).

Digital Natives - Digital natives are young computer users who are native speakers of the digital language used in computers, video games, cell phones, email, and the web (Prensky, 2001a).

ECIS – European Council of International Schools is an accrediting association that promotes best practice of European and international education (ECIS, 2007).

IBO - International Baccalaureate Organization offers international education programs to a worldwide community of schools with students aged 3 to 19. The IB programs help over 573,000 students in 125 countries develop the intellectual, personal, emotional and social skills needed to meet the challenges of a rapidly globalizing world (IBO, 2007).

IC – International College is an independent, non-profit, K-12 international school established in 1981 and is situated on the campus of the American University of Beirut. IC is accredited by the New England Association of Schools and Colleges (NEASC) and the European Council of International Schools (ECIS) and is also authorized by the International Baccalaureate Organization (IBO). English is the main language of instruction and communication in a community of over 3,400 students coming from 24 nationalities (International College, 2007a).

Industrial Age – The industrial age is the era in which quarries and forests were the sources of raw materials used for manufacturing in factories and assembly lines (Warlick, 2005a).

Interaction – Interaction involves all communications among teachers and students when using Web 2.0 tools. Interaction requires communication, and collaboration may result from interaction (Author).

ISTE - The International Society for Technology in Education is a leading international organization that promotes the effective use of technology by students, teachers, and administrators in PK–12 schools. ISTE sets the National Educational Technology Standards (ISTE, 2007b).

Knowledge Age - The knowledge age is the current computer era in which digital information is accessed, stored, networked, analyzed, evaluated and processed into knowledge at home, at work, and in society (Warlick, 2005a).

LMS – A learning management system is an online system used to extend classrooms with online modules for managing announcements, assignments, grades, shared calendars, shared files, links to online resources, class-related messaging, and bulletin board discussions (Oblinger & Oblinger, 2005)

Millennial Students - Students of the 21st century who have been exposed to computers at a very young age and have been raised in environments that are rich with technology and digital media. Unlike previous generations, these students have an information technology mindset and are capable of multitasking and fast switching from one activity to another (Frand, 2000; Oblinger & Oblinger, 2005).

NCATE - National Council on Accreditation of Teacher Education (NCATE) seeks to establish high quality teacher preparation. It adopts ISTE's NETS to encourage schools to introduce reform projects to meet the required technology skills and teaching practices. Implementing these standards in meaningful ways, however, is a major challenge (Stuve & Cassady, 2005).

NEASC - New England Association of Schools & Colleges was founded in 1885 and is considered as the oldest regional accrediting association in the United States.

NEASC maintains high standards from pre-K to the doctoral level. NEASC serves over 2,000 public and independent schools, colleges and universities in New England and over 70 American and international schools worldwide (NEASC, 2007).

Net Generation – The Net generation includes 21st century students who use computers and the Internet for doing most of their work and studies. They expect things to work properly and work fast. They learn by doing and get bored from reading instruction manuals or listening to lectures. They use cell phones, laptops, desktop computers, PDAs, wireless connections, portable digital music players, and digital cameras. They get bored if not challenged properly (McNeely, 2005).

NETS - National Educational Technology Standards are set by the International Society for Technology in Education (ISTE) to provided teachers, students, and administrators with guidelines to help them meet the challenges of a technology rich society (Stuve & Cassady, 2005).

Pew Internet & American Life Project - The Pew Internet & American Life Project investigates the impact of the Internet on families, communities, work and home, daily life, education, health care, and civic and political life. Reports are always based on authoritative methods of real-world data collection and statistics (Pew Internet & American Life Project, 2007).

Podcast – A podcast allows users to publish their audio and video recordings to the web. Publishing audio and video recordings of lectures, class discussions, and audio books has become popular in educational institutions. Portable audio and video players; mainly the iPod from Apple made this technology widely popular (Richardson, 2006).

Qualitative Research - Qualitative research is based on investigations in ethnographic, field, and participant observer research. In this type of research, the researcher, an integral part of the study, observes and interacts with variables in their natural setting (Yin, 2003a).

Read/Write Web – The read/write web is a new set of easy to use tools represented by a new concept in programming called *Web 2.0* that has allowed millions of users to publish their ideas and collaborate with an audience that spans the globe (O'Reilly, 2005; Richardson, 2006).

RSS - Rich Site Summary is a tool that allows users to subscribe to updates of websites, blogs, and podcasts that are relevant to their research. RSS simplifies the task of tracking changes and additions in active sites that are being studied (Warlick, 2005b).

Social Networking Sites – Social networking sites are Web 2.0 based tools that allow users share a lot of private information including photos and personal details. Users get to know a lot about the private lives of others which poses major security and privacy risks. Examples of these sites are Facebook.com and MySpace.com (Losinski, 2007).

Web 2.0 - A new concept in web programming which has allowed millions of users to easily publish their files and ideas and collaborate with an audience that spans the globe (O'Reilly, 2005). For the purpose of this study, Web 2.0 tools only included technologies related to blogs, wikis, podcasts, and RSS (Author).

Wiki – A wiki is a web page that can be created and edited by any web user. The idea started with Wikipedia, the online encyclopedia that contains content that is collaboratively created and constantly edited by users (Achterman, 2006).

Organization of the Study

Current teaching practices lack the interactive technologies that engage today's students in learning. High school students are not efficiently using their computer skills in their daily learning activities although they have actively used and participated in Web 2.0 sites including social bookmarking sites, wikis, blogs, and podcasts. This study examined how Web 2.0, including blogs, wikis, RSS, and podcasts, could change teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom.

Chapter 2 presented a review of the literature in the areas of Web 2.0 and the 21st century skills needed by today's generation of high school students. Chapter 3 detailed the research methodology chosen to answer the research questions. Procedures included interviewing the participating English language teachers, training them to use Web 2.0 in their classrooms, observing teaching practices while using Web 2.0, observing the way teachers and students collaborate using these tools, interviewing teachers post the implementation phase, and surveying the students to reflect on their experience in learning English using Web 2.0. The appendices showed all the forms used in interviews, observations, and student survey. Chapter 4 presented the results through a narrative description based on the various instruments used. Chapter 5 offered research-based recommendations, challenges, and strategies for high school English language teachers who see a potential of using Web 2.0 in their teaching.

Chapter 2

Review of the Literature

The literature review explores the developments that led to the Knowledge Age we live in today. A widening gap has been forming between the current teaching methodologies and the technological competencies and interests of today's high school students. These students have superior computer skills; they are native speakers of the digital language. Newly emerging educational technology standards that are designed to meet the needs of today's students were identified. O'Reilly (2005) considers that Web 2.0 offers the platform for creating collaborative learning environments that foster meaningful learning. Research about the potential of using Web 2.0 tools, like blogs, wikis, podcasts, and RSS, in teaching and learning were explored.

Recent developments in computing in the last quarter of the 20th century have made computers widely available. The Internet has provided a worldwide network that allows for ubiquitous sharing of information (Richardson, 2006). These fast developments have moved us from an industrial age to a knowledge age (Warlick, 2005a), and have created a wide gap between current teaching practices and the technological competencies and interests of today's *digital native* generation of high school students (Prensky, 2001a). Web 2.0 tools including blogs, wikis, podcasts, and RSS have created a read/write web that allows users around the globe to contribute to a

rich body of knowledge (Richardson, 2006). New educational technology standards for students, teachers and administrators have been emerging to prepare our community for the 21st century (ISTE, 2007a). As a result, a continued effort to enhance teaching practices using technology has become a major challenge for educators.

Industrial Age vs. Knowledge Age

In the last two centuries, education was mostly geared toward preparing students for an *industrial age* in which quarries and forests were the sources of raw materials used for manufacturing in factories and assembly lines (Warlick, 2005a). Ten years ago, computers were mainly used for administrative tasks and limited library research. It was common to have a limited number of PCs with Internet connections in a school (Losinski, 2007). The beginning of the 21st century witnessed the creation of a new age, the *knowledge age*, in which digital information is accessed, stored, networked, analyzed, evaluated and processed into knowledge at home, at work, and in society (Warlick, 2005a). Literacy needs to be redefined for students to be able to face the challenges of the 21st century (Warlick, 2004).

To cater to the learning needs of today's students, Warlick (2004) suggests that teachers need to work smarter rather than harder by becoming education-savvy experts who supervise students while they are engaged in exploring information and constructing knowledge. Such students collect their own digital information from resources that exist in publications around the globe in various textual and media formats that make sense to them and assemble them in the form of personal references that grow with their continued studies. To succeed in such a learning environment, students need to learn how to teach themselves. Students need to have immediate access to resources rather than spending

time looking through 5-year-old textbooks or waiting for a response from a teacher shared by 30 students.

A Widening Gap in Teaching and Learning

A wide gap has been forming between current teaching methodologies and the technological competencies and interests of high school students. Students who are currently in high schools have been using the Internet for over 10 years. These millennial students were described by Prensky (2001b) as *digital natives* since they are native speakers of the digital language used in computers, video games, cell phones, email, and the web. On the other hand, current teachers were described as *digital immigrants* who have invested in adopting digital technologies into their teaching practices. They used the Internet to provide resources to students and learned to build WebQuests to provide students with rich inquiry activities (Warlick, 2005a).

Today's students are representatives of the *Net Generation*. They use computers for doing class work while enjoying their favorite hobbies. They can be described as the cut-and-paste generation. They learn by doing and get bored from reading instruction manuals or listening to lectures. They use cell phones, laptops, desktop computers, PDAs, wireless connections, portable digital music players, and digital cameras. They expect things to work properly and work fast. They get bored if not challenged properly. These learners need teachers' attention and help (McNeely, 2005).

Millennial Students

The knowledge age allows students and teachers to bypass the limits of the classroom and collaborate interactively through the Internet with peers, scientists,

experts, and researchers throughout the globe. Students have the potential to establish authentic real-time experiences by publishing their work using a variety of compelling media formats and receiving immediate feedback (Warlick, 2005a). Today's students use the Internet to collaborate using email, discussion boards, blogs, wikis, podcasts, social networking, tagging, and bookmarking. Each type of input, whether it is a message that is posted to a discussion board, an entry or a comment in a blog, a reply to a message, a photo that is tagged, or a friend who is added to a social networking site, is an opening avenue to collaboration. Students seem to rely on the web as a native environment for collaboration.

In Pew Internet & American Life Project, Lenhart (2006) found that 57% of teenagers have created their own online content including text, photos, audio and video. Twenty two percent have created personal web page and 19% have blogs. Two thirds of teenage bloggers read the blogs of people they know while one third read the blogs of friends and strangers. Eighty seven percent of bloggers allow comments from others. Teenagers blog as a hobby to express themselves creatively and to share their personal experiences. Social networking websites are creating amazing relational networks. Readers of a certain article can collaborate with other like-minded readers and get to learn about the authors of similar articles (Warlick, 2005a). In evenings today's students IM (Instant Message) their friends in places that span the globe. Even these students purchase virtual gifts in the form of digital greetings to display on the page of their favorite friends as is the case on Facebook, an actively growing social network.

The need for collaboration of students of the 21st century is substantiated by the soaring traffic to sites built around user participation and in which young people are

major participants. According to Walker (2006), from February 2005 to February 2006 *Blogger.com* has grown by a factor of 528%, MySpace.com by a factor of 318%, and Wikipedia by a factor of 275%. Seventy five thousand new blogs are created every day at an average of one blog per second. Technorati, a blog tracking service, logged over 57 million blogs between March 2003 and October 2006. In February 2008, Hogan reported that 114 million blogs have been published at the rate of 175,000 new blogs per day.

According to Solomon and Schrum (2007) today's students come to school familiar with the Internet and expect to be in charge of their own learning. Utecht (2006) explains that today's students like to customize their own digital devices and work environments. Any device or application that is not customizable is of no use to them. Students like to customize their desktop background, operating system settings, colors, and visual themes. Learning technologies need to be customizable if we are to engage today's students. Students need to enjoy technology at school in order to learn. McNeely (2005) explains that although these students are very good in communicating and using online interaction tools, they might not know how to best use these communication technologies for an educational benefit. More research is needed to find the tools in which today's students are interested.

Teacher's Use of Technology

Savvy teachers built their own websites to share materials with their students. Some schools are using learning management systems (LMS) to extend classrooms with online modules for managing announcements, assignments, shared calendars, shared files, links to online resources, class-related messaging, and bulletin board discussions. Yet, the online interaction skills of today's 21st century students are way beyond those of

their teachers (Oblinger & Oblinger, 2005; Losinski, 2007). These millennial students have been exposed to computers at a very young age and have been raised in environments that are rich with technology and digital media. Unlike previous generations, these students have an information technology mindset and are capable of multitasking and fast switching from one activity to another (Frand, 2000; Oblinger & Oblinger, 2005).

According to Geck (2006), most of today's students start with a Google search when solving homework assignments even if an Internet search is not the most efficient way to find the answer. The over-reliance on Google indicates that these students are becoming unaware of the importance of books and other print materials that might be better suited for finding more appropriate answers for certain questions. The fact that Google returns tens of thousands of results makes students confident to adopt the search engine as their primary tool to search for information. It makes them feel self-sufficient and powerful when retrieving many results. Unfortunately, most often these students do not have the metacognitive skills to judge the collected information. The abundance of results makes students careless about determining the authenticity of information resulting in faulty conclusions.

Twenty-First Century Skills

The North Central Regional Educational Laboratory (NCREL) (2003) classified 21st century skills under four main categories: Digital-age literacy, inventive thinking, effective communication, and high productivity. *Digital-age literacy* includes basic, scientific, visual, technological, economic, multicultural, and global awareness literacy skills. *Inventive thinking* includes self direction, adaptability, managing complexity,

curiosity, creativity, higher order thinking, sound reasoning, and risk taking skills. *Effective communication* includes interactive communication, teaming, collaboration, civic responsibility, social responsibility, personal responsibility, and interpersonal skills. *High productivity* includes effective use of real-world tools, planning, prioritizing, managing results, and producing high quality products. A group representing business and education in the US called the *Partnership for the 21st Century Skills* explains that education is changing (2004). Twenty first century skills need to be taught to students to be able to compete and succeed in today's rapidly growing global economy. On the other hand, the report explains that today's teachers need new tools to be able to teach these skills.

National Educational Technology Standards

The Preparing Tomorrow's Teachers to use Technology (PT3) initiative, that started in 1999 and has become a major reference for educational technology institutions, has played a major role in changing teaching practices for integrating technology in teaching. In addition, the National Educational Technology Standards (NETS) set by the International Society for Technology in Education (ISTE) have provided teachers, students, and administrators with standards to help them acquire 21st century skills to meet the challenges of a technology rich society. On the other hand, the National Council on Accreditation of Teacher Education's (NCATE) adoption of ISTE's NETS *have pushed schools to introduce reform projects* to meet the technology skills and teaching practices required by these standards. Implementing these standards in meaningful ways, however, is a major challenge (Stuve & Cassady, 2005; Kelly & Haber, 2006). Although introducing a change in teaching practices is difficult, meeting technology standards have

been the main motive for teachers to innovate in their use of technology in teaching to cater for the needs of their technology-savvy students and the challenges of an information-driven age (Brooks-Young, 2007). In addition, schools and teachers are held accountable by students, parents, and accreditation agencies for meeting these challenges. NETS offered the guidelines needed for ensuring proper implementation of information and communication technology in the curriculum (Kelly & Haber, 2006).

Standard 4 of the current version of NETS for students (NETS-S) expects today's students to use telecommunication tools to interact with peers and experts and collaborate with them on projects. Students are also expected to use a variety of media and formats in their communications to effectively express their ideas to multiple audiences (ISTE, 2005). On the other hand, *standard 2*, in the newly released draft of the "next generation NETS-S", students are required to contribute to project teams to create original works and solve problems (ISTE, 2007c). The emphasis on collaboration is clear in this new revision of the standards as more Internet-based interaction and collaboration tools have become available to students. A continued effort to enhance students' education using 21st century skills in technology has become a major priority for all schools.

Web 2.0 and Education

In 1993, the development of the Mosaic web browser allowed millions of people around the globe to gain access to information published on the World Wide Web. People went online in search for new information and answers to their questions. Others learned web design and publishing skills and published content to the web to make their views and information available to a world wide audience. By the end of the twentieth century, the Internet had become an essential research and communication resource that was

adapted by most schools, universities and research centers. Even with this immense growth, sharing information on the web was limited to those who invested in learning the essential skills needed for web publishing. Building collaboration modules on these published sites was another challenge for website publishers. Although there were newsgroups that allowed users to share their ideas, access to such resources remained limited to a few savvy users who know how to access them. For most users, the ability to create and share web content was not as easy as accessing it (Richardson, 2006).

Web 2.0: The Read/Write Web

Today, a new set of easy to use tools represented by a new concept in programming called *Web 2.0* has allowed millions of users to publish their ideas and collaborate with an audience that spans the globe (O'Reilly, 2005). These tools gave rise to a *Read/Write* web. *Blogs*, short for web logs, were the easiest of Web 2.0 tools that allowed users to create personal journals and resource sites to share with their colleagues, students, and community. *Wikis* allowed for collective editing of online documents. They were most popular in teams and collectively authored works. Wikipedia was the most famous product that was based on this technology. *Podcasts*, on the other hand, allowed users to broadcast their audio recordings to a world wide audience. Narrated stories, poetry, and lectures quickly found their way on podcasting sites and blogs. Updates on blogs and podcasts can be easily tracked by registered users using *RSS* (Rich Site Summary) feeds. New Web 2.0 tools are continuously produced by enthusiastic programmers around the globe (Purmensky, 2006; Richardson, 2006). Blogs, wikis, podcasts, and RSS are also considered as powerful tools for managing virtual teams (Brown, Huettner, & James-Tanny, 2007). The read/write nature, ease of use, and

customizability of the Web 2.0 tools have made them very popular for today's generation of Internet users. According to O'Reilly (2005), Web 2.0 is participatory, scalable, and cost effective. It is a platform of services that is built on collective intelligence. In Web 2.0, users customize and control their own data. Software applications are server based and developed, shared, and maintained collectively by programmers from around the globe.

Web 2.0 tools entice students to create, communicate, and publish online content. Supported by an open-source community of developers, many Web 2.0 tools are becoming increasingly adopted by virtual communities. Although these tools are new to education, many teachers have developed innovative ways to use them with their students through creating collaborative subject-specific projects, literature circles, math solutions, and guidebooks (Solomon, & Schrum, 2007). Web 2.0 tools foster engaged learning principles in which students build their own understandings by working on extended collaborative investigations that require creativity and higher order thinking (Johnston & Cooley, 2001).

Web 2.0 Technologies

Web 2.0 is based on programming efforts of open source developers who enjoy sharing their programs with other programmers on the web. Web 2.0 tools are mostly programmed with Asynchronous JavaScript and XML (AJAX) (Solomon & Schrum, 2007). AJAX was favored by programmers because it allows the user to pull pieces of data from the server without reloading the whole page. It speeded up interaction on a web page and allowed users to access a lot of data and interact with content on a single page. Many of the programmers work from many locations around the world, and the

applications are hosted on the web directly which led to the creation of many web top applications on a large number of sites (Brooks-Young, 2007; Richardson, 2006). Based on the collaborative nature of Web 2.0 programming, Web 2.0 tools are works in progress that are open for continuous feature updates (Solomon & Schrum, 2007). The recent rise of cloud computing with online operating systems like the Internet Operating System/3 (XIOS/3) from Xcerion (www.xcerion.com), Web 2.0 developers are demonstrating that applications and operating systems can ultimately reside on web servers. In such an environment, users do not need to be bound to one device to run their applications; any Internet-enabled device is enough to access the online operating system and all needed applications. Although this new method of computing necessitates full dependence on Internet connectivity, it reduces the time and skills needed for a user to maintain, update, and secure computers, software applications, and operating systems (Xcerion, 2008).

Blogs

According to Warlick (2005b), blogging is the main tool for building literacy skills in the twenty-first century since it is revolutionizing reading, writing, self expression, and publishing over the Internet. When preparing students as life-long learners, teachers realize that self reflection is a key skill that students should develop (Purmensky, 2006). When sharing reflections online, students become members of a learning community in which content and meaningful experiences are created by the students themselves. This can be done successfully in blogs. Successful reflections include *ongoing critical reflection* and *shared reflection* allowing for reactions to other students' work and creating a learning community.

According to Solomon and Schrum (2007), blogs are "natural tools for writing instruction" (p. 81). In a blog students can write, revise, review the writings of peers, and get feedback from their teachers. These skills are at the heart of the writing process. English language teachers have started experimenting with blogs in their classes. By sharing what they write on a global level, students see a permanency of their words that usually can never happen when a paper is submitted in a traditional class. At Gunston Middle School in Arlington, VA, an English language teacher created a blog on Shakespeare, Dickinson, and Frost to teach poetry. The students wrote what they learned and how they felt about the studied poems. They were happy to receive comments on what they wrote. Other schools are allowing their students to post their own poems and illustrated stories on blogs.

Penrod (2007) considers that blogs are new tools for teaching composition since writing is a core skill for bloggers. In addition to offering ease of use and publishing, blogs empower students who are often marginalized in the classroom. The power of saying words in writing is achieved in blogs. Students who are shy or who have specific learning styles might prefer to express themselves on blogs rather than open discussions. Blogging is very helpful for deaf students to communicate with others. Based on the collaborative nature of blogs, Penrod explains that blogging encourages fluency in writing, cooperative learning, critical thinking, and performance-based learning.

Wikis

Wikis are pages that can be created and edited by any web user. The idea started with Wikipedia, the online encyclopedia that contains content that is collaboratively created and constantly edited by users. Researchers around the globe contribute to this

constantly growing body of knowledge. Since wikis can be edited multiple times, they can provide a medium for collaborative construction of knowledge. Wikis are easy to edit and allow users to create non-linear documents using hyperlinks. Edits of a wiki can be tracked and reviewed which creates an environment for reflection and metacognition. With wikis, teachers can track individual and group progress while students are collaborating on the creation of full documents. The potentials of wikis as instructional tools are still to be researched (Achterman, 2006).

As in most Web 2.0 activities, the more autonomy teachers give to students, the better it is for creating an inviting environment for students in which they take responsibility and ownership of their projects. Although it is a challenge for teachers to control the content of wikis since students have editing rights at any given time, students need to be taught to become good editors in the era of the Read/Write web. Teachers have started creating wikis for a variety of projects. At East Side Community School in Manhattan, teachers created wikis for community members to share information about school news, art shows, and sports teams. When students attempt to edit a wiki with certain ideas in mind, they have to read critically what has been written by others and build on it even though the original writing is not their own. This is a huge shift in the way students usually work. A history of all edits on a wiki is kept for the teacher to evaluate each student's level of contribution to the collectively created document. On another level, some teachers have created wikis to share lesson plans that can be fine tuned by the collective expertise of contributing teachers. Other teachers have created wiki-based projects like Planet Math (http://planetmath.org) to develop a math encyclopedia through a virtual community of math educators. Wikis are ideal for

brainstorming activities, book reports, poetry, topic-based wikis for subjects studied in class, problem solving wikis, and most projects that lend themselves to the collaborative creation of content (Richardson, 2006).

Podcasts

Podcasts allowed users to publish their audio and video recordings to the web. The first popular educational use of podcasts was the sharing of audio and video recordings of lectures, class discussions, and audio books. This technology became widely popular because of portable audio and video players; mainly the iPod from Apple. Richardson (2006) explains that podcasts allow teachers to record their class sessions in mp3 audio format and broadcast them to their students. Students can always go back to the recorded sessions to fix their notes or verify what they have learned in class. Today's students use portable digital players frequently, and they may find it useful to transfer class recordings to their players and listen to them at their convenience. With blogs, wikis, and podcasts available, Internet users became writers who share their experiences, ideas, views, insights, resources, and research. Also, reacting to others' publications and collaborating on collective written articles became widely possible.

According to Williams (2007), there are various ways in which podcasts can be integrated into the curriculum. Teachers can either use ready-made podcasts or produce their own during their sessions with students or while preparing for their classes. Students may also create their own podcasts for poetry and plays. Podcasts can be located with regular search engines and thus they can be considered as resources that students can listen to and use in their research. Schools can use podcasts to broadcast school news and announcements. Teachers could use podcasts to archive their lectures for future reference

and for offering remedial help to students who miss classes because of illness. Students just need to use their computer or portable media players to listen to lectures and review lesson content. Slow students can benefit a lot from podcasts of archived lectures especially if instructors speak faster than students can understand at one time.

Rich Site Summary (RSS)

According to Warlick (2005b), Rich Site Summary (RSS) feeds help students to *expose information* by subscribing to updates of websites, blogs, and podcasts that are relevant to their research. RSS uses push technology to send new entries to subscribed users. In addition, enhanced search engines like Google allow users to setup email alerts for certain search criteria in order to be notified when new search results become available. Wikis, blogs, and podcasts allow students to manipulate, analyze, and express newly constructed knowledge for a world wide audience. Web 2.0 tools offer a promise to allow 21st century students to teach themselves as they become lifelong learners. Teachers need to guide these students to learn how to use information responsibly and ethically in this information age where ubiquitous access of information is shared with a global community.

Web 2.0 and Online Safety

While Web 2.0 tools offer collaborative ways for learning and instruction, Solomon and Schrum (2007) explain that schools implementing such tools need to secure the online privacy and safety of their students and teachers. Losinski (2007) questions the educational value of certain Web 2.0 tools including social networking sites like facebook.com and myspace.com. On these sites, students share a lot of private information and get to know a lot about the private lives of others which poses major

security and privacy risks. Losinski recommends that schools block these sites on their web filters, yet he acknowledges that students can always find ways to bypass the school proxy server and tunnel their browsing activities through their home-based proxy servers. An Acceptable Use Policy (AUP) is the best option to educate students about the dangers of such tools.

Professional Development for Teachers

In the 21st century, technology is rapidly changing education, learning environments, and student interactions regardless of teachers' readiness that change (Shank, 2000). Schools in the US have invested tremendously in technology education and training. Teachers are now required to use technology in their teaching (Collier, Weinburgh, & Rivera, 2004). The rapid pace at which technology is improving has inspired educators and schools to create new technology-enhanced teaching methods to improve the quality of education (Solomon & Schrum, 2007).

Solomon and Schrum (2007) explain that using new Web 2.0 tools is not enough; schools have to create new methods of teaching and learning to take advantage of these tools. New teaching methods are needed to help students meet the academic and living challenges of the 21st century. Luckily, current high school students have lived with technology and are technologically capable to use new tools. Educators are to find ways to use established pedagogy with Web 2.0 tools to help students develop 21st century skills. Students need to be trained to use these tools for leaning as well as for satisfying their intellectual curiosity.

Wenglinsky (2005) explains that technology is not inherently good or bad, yet the value of using technology depends on how it is used. The computer provides us with efficient technology by being a research tool, a data analyzer, and a presentation tool. Computers proved to be efficient when used for problem solving, critical thinking, project-based learning, constructivist learning, for connecting learning with the real world

According to the US Department of Education (2004), more training is required to help teachers integrate technology into their teaching. Training is essential for benefiting from the promise of the Internet in enriching the learning experience. Students used computers more at home than at school. Today's students are ahead of their teachers with respect to computer literacy. Pelligrino (2004) explains that workshops need to be followed by ongoing support in order for the training to be fruitful and to allow for introducing substantive changes in teaching methodologies. Solomon and Schrum (2007) explain that Web 2.0 tools need to be used by teachers authentically and in real contexts. Teachers will then become comfortable with these tools and will be able to use them in their classes. These online tools will allow for the creation of a new type of learning communities for teachers and students. Once learning communities are created there is a challenge for maintaining participation and interaction among members.

According to Jonassen, Howland, Marra, and Crismond (2008), traditional ways of using technology as delivery vehicles will not result in meaningful learning. Today's students need to be engaged in their own learning by constructing knowledge, conversing with peers, collaborating on projects, building communities, and reflecting on their learning. Solomon and Schrum (2007) explain that new models of professional development can benefit from past models of technology integration. Developing a

community of practice may lead to finding innovative ways of teaching and learning using such tools. Today's students are living and playing with Web 2.0 tools, and schools must use these tools to help students acquire new skills rather than use them just for fun.

Hidden Potentials of Web 2.0

According to Solomon and Schrum (2007), technology alone does not necessarily enhance education, yet a mix of teaching strategies and technology innovations can create unique and successful learning environments. Web 2.0 tools offer promising tools to enhance education, yet they also offer disruptive technologies that offer an unprecedented form of freedom of speech that may provide new alternatives to traditional methods of publication which may ultimately affect schools. While the outcomes of using technology in education are largely debatable, Fadel and Lemke (2006) explained that effective use of technology in the classroom can lead to higher levels of learning.

Conclusion

Teachers need to address student needs by changing their teaching practices to train students on how to control information in a positive, productive, and personally meaningful way using critical evaluation skills. An information code of ethics for both teachers and students need to be followed to guarantee the authenticity and credibility of the constructed knowledge (Warlick, 2004). New teaching methods are needed to develop a new literacy for the 21st century. According to Warlick (2005b), students need to learn to expose information, employ information, and express their ideas compellingly. Exposing information requires them to find, decode, and evaluate relevant information. Employing information requires them to process, manipulate, analyze, and add value to newly constructed knowledge. Finally students need to learn how to express their ideas

compellingly using text, graphics, sound, video, virtual reality, and various types of media that they find relevant to them and their society. This vision of literacy is a *learning literacy* that is needed for personal growth of students living in the learning-centered 21st century. According to Richardson (2006), Web 2.0 technologies including wikis, blogs, podcasts, and RSS feeds offer powerful tools for students and teachers to achieve this vision of a *learning literacy* for the 21st century. Web 2.0, a continuously improving concept that is based on the collective intelligence of its users (O'Reilly, 2005), provides the platform for creating collaborative learning environments that foster meaningful learning since it allows for establishing collaborative learning relationships. With Web 2.0, students are invited to weave information and collective intelligence in a way that was not possible in traditional learning environments (Jonassen et al., 2008).

Chapter 3

Methodology

This chapter explains the methods and procedures that were used to examine how Web 2.0 tools improve teaching and collaboration in high school English language classes. Qualitative research is the method of choice since it provides an inductive methodology that uses data collected by the researcher to form a contextual explanation of the studied phenomenon (Gay & Airasian, 2003; Yin, 2003a). It has the potential to develop a profound perspective to show how phenomena take place within the studied context and in direct contact with participants (Yin, 2003b). Qualitative research provides the methods needed for the researcher to study participant perspectives in natural settings (Miles & Huberman, 1994). Web 2.0 is being used in a very active way by today's students. The increasing use of Web 2.0 tools requires the researcher to build a deeper understanding of the various factors involved in order to employ the built-in interactive capabilities to enhance teaching practices and student collaboration in the English language classroom.

Research Design

This qualitative, descriptive case study investigated a specific phenomenon by examining several particular instances in depth and in a holistic manner to answer specific research questions using a variety of data collection methods over a specified

period of time (Gay & Airasian, 2003; TESOL, 2007). It explored the experiences of two in-service English language teachers and their 37 students of two high school classes in which Web 2.0 was implemented in the teaching a full Language Arts unit during the 2007-2008 academic year. Both IRB and the school administration approved the study as shown respectively in Appendices A and B. The duration was 2 months that took place between the 28th of February and the 24th of April, 2008. Yin (2003a) explains that the *logic model,* in which the trail of cause and effect that link interventions with expected outcomes, is best to be used in a case study involving a community-based collaborative initiative. The logic model was intended to identify hypotheses about how collaboration is taking place; then these hypotheses were tested using the collected qualitative data. Unlike experimental or quasi-experimental designs which measure outcomes and process variables, this qualitative case study model identified the dynamics of collaboration in the English classroom. It allowed the investigation of phenomena in their real-life context while identifying how outcomes were linked to interventions.

Qualitative research is based on various types of positivist, post-positivist, constructivist, critical, and post- structuralist paradigms (Hatch, 2002; Merriam, 2002). These paradigms help in defining the core of the research design and allow for the development of a sound research methodology. This study was best supported by a mixture of the post-positivist and constructivist paradigms of qualitative research, and the structure was supported by elements from both paradigms. Ontologically, Web 2.0 is a new phenomenon that is functional yet is not fully apprehended. Epistemologically, the researcher is a data collection instrument, and both the researcher and participants tried to construct new understandings. Methodologically, clearly defined qualitative research

methods and low level statistics are needed. The end product was a case study that included descriptive narratives, interpretations, collaboration patterns, and recommendations (Hatch, 2002; Maxwell, 2005).

In conclusion, this research presented a mix of post-positivist and constructivist qualitative paradigms in which the researcher was an active data collection instrument. The researcher and participants co-constructed understandings in a natural classroom setting. The next section explores in the detail the development of the approach and procedures that were used to answer the research questions.

Approach and Procedures

Based on research and descriptions by Yin (2003b), Merriam (2002), and Hatch (2002), this investigation was classified as a descriptive case study that aimed to explain how Web 2.0 tools can improve teaching practices and student collaboration in the English language classroom. Research procedures examined closely various areas ranging from interviewing the participating English language teachers, training them to use Web 2.0 in their classrooms, observing teaching practices while using Web 2.0, observing the way teachers and students collaborate using these tools, interviewing teachers post the implementation phase, and surveying the students to reflect on their experience in learning English using Web 2.0. In all phases of the implementation, the researcher was an active instrument collecting data and constructing understandings in a natural classroom setting (Hatch, 2002).

Participants

Participants were two experienced English language teachers and their 37 students of two grade 11 classes at the secondary school of International College, Beirut, Lebanon.

Participating teachers and students were comfortable in using the computer and the Internet. The English teachers were experienced in conventional methods of teaching English at the high school level and in international school settings. The choice of grade level and teachers came based on a discussion between the researcher and the faculty members of the English department. The participating teachers volunteered to participate because they were comfortable in using the Internet and they were keen to experiment with new technologies to vary their methods of instruction.

Units of Analysis

The identification of units of analysis as major entities to be analyzed in case studies was essential for answering research questions (Creswell, 2002; Yin, 2003a; Babbie, 2006). Units of analysis define "what" or "whom" that was being investigated (Babbie, 2006). According to Yin (2003a), an individual, a group, a program, and a process can be units of analysis. Based on the research questions, three units of analysis were identified: (a) the two grade 11 English teachers who were teaching these two classes, (b) students of both classes, and (c) the use of Web 2.0 tools. The choice of students and classes was dependent on the teachers who volunteered to participate.

Interviewing Teachers before Implementation

The teacher interviews were the formal beginning of the investigation. Teachers were asked about their computer skills and their conventional teaching and assessment methods used in English language classrooms. Teaching practices and student interaction patterns were identified during the interview.

Teacher Training

Participating teachers took a full week of training on the technicalities of using Web 2.0 – based websites to learn how to create blogs, wikis, and podcasts and to learn how to manage RSS feeds. Teachers prepared a teaching unit that used Web 2.0 at the core of the teaching practices. The content taught over an academic year is usually divided into several thematic units depending on grade level. The teachers and the researcher cooperatively decided on a set of activities to be used in the participating classes during the implementation phase.

Table 1

Web 2.0 Tools and Sites Used in Teacher Training

Web 2.0 Tool	Site	Objectives
Blog	Blogger.com	- Create a blogger.com account - Create a blog and - Apply a theme - Manage posts, settings, and comments - Manage the design layout - Manage RSS feeds
Wiki	Wikispaces.com	- Create a Wikispaces.com account - Create a wiki - Manage the wiki space settings - Upload files and photos on the wiki - Manage Notifications and RSS - Manage changes on the wiki
Podcast	MyPodcast.com	- Create a MyPodcast.com account - Record podcasts using MyPodcast Recorder provided by the site - Record podcasts using a potable digital audio recorder - Publish podcasts - Manage podcasts
RSS	iGoogle	Setup an iGoogle page Add RSS Links from blogs, wikis and podcasts Manage RSS feeds

Teachers were trained to use all features of the Web 2.0 sites including Blogger.com, Wikispaces.com, MyPodcast.com, and Bloglines.com based on the objectives detailed in Table 1. The training used the online tutorials provided by each of the sites. These sites were selected by the researcher based on popularity, built-in tutorials, and ease of use. After sufficient training was given about all the features of each site, teachers participated in a brainstorming activity in order to decide on ways of integrating the Web 2.0 site into their teaching practices. As a result, teaching activities were prepared by the teachers in a collaborative effort using the identified potentials of the Web 2.0 sites. The same unit was taught in both classes.

Classroom Observations and Teacher Interviews during Implementation

The teachers introduced students to blogs, wikis, and podcasts and gave them the web addresses of the created activities. The researcher was in contact with the teachers when they were teaching the Web 2.0-based unit to make sure that all technical difficulties were overcome during implementation. Based on reports of ease of use of Web 2.0 tools (Warlick, 2004; Richardson, 2006), it was assumed that there was no, or a very small, learning curve for students in using these tools. In-class student interaction patterns were identified and recorded by the researcher who monitored closely all online interactions and collaborations taking place in blogs, wikis, and podcasts on a daily basis throughout the implementation phase. Online interaction patterns were identified and documented. Teachers were interviewed about their teaching experience using Web 2.0 in order to identify emergent issues and record changes in teaching practices and student collaboration. According to Hatch (2003) and Merriam (2002), simple descriptions of events are not sufficient to construct meaningful conclusions. The researcher needed to

spend most of the data collection phase at the research site to be able to develop insights into what the teachers and students were experiencing. Gay and Airasian (2003) explained that a trust relationship between the researcher and the participants needs to develop in order to collect meaningful data.

Post Implementation Student Survey and Teacher Interviews

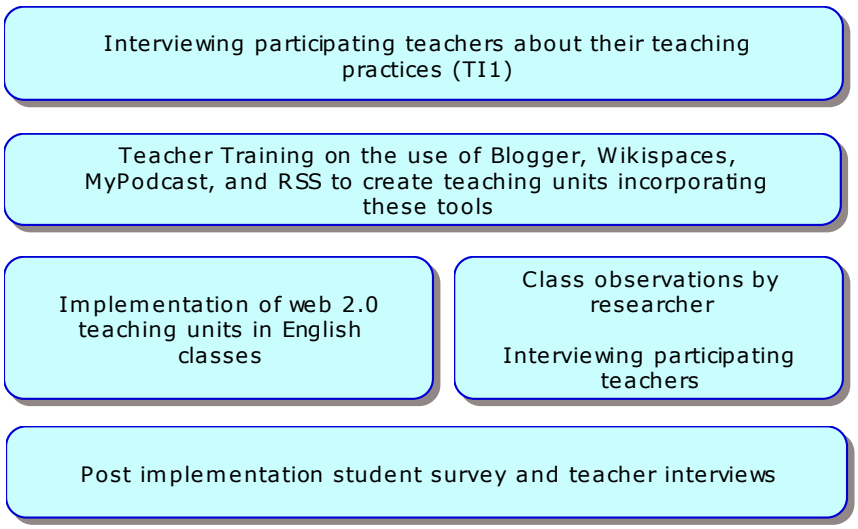
Following the implementation of the Web 2.0 unit, participating teachers were interviewed to identify the advantages, benefits, challenges, difficulties, and limitations of using Web 2.0 in the English classroom. Changes in teaching practices and newly developed strategies were discussed in detail. Teachers' reflections helped the researcher identify and analyze all encountered issues. On the other hand, participating students were asked to fill out a survey questionnaire to reflect on their experiences. The researcher coded, summarized, and analyzed all collected information to answer all research questions. According to Yin (2003a), the challenge is in properly identifying why and how research interventions lead to observed outcomes.

Instrument and Data Collection

Data was collected in the form of open-ended interviews with teachers before, during, and after the implementation phase, field notes, and an open-ended paper-based student survey after the implementation phase. Observer effects like the *Halo Effect*, in which research is affected by the initial impressions of the observer, and the *Hawthorne Effect*, in which the obtrusive nature of observation process might cause initial improvement to occur, needed to be controlled (Gay & Airasian, 2003; Maxwell, 2005). The two month period allowed the researcher to control for both effects. Data collection procedures were detailed in Figure 1.

Figure 1

Data Collection Procedures



Interviews

Interviews are key inquiry tools in qualitative research to collect precise, relevant, and meaningful information from which the researcher can draw theories and identify patterns (Yin, 2003a; Babbie, 2006). Interviews were used to understand the experiences of the involved teachers before, during, and after implementation. Interviewing teachers at the beginning helped the researcher build an initial understanding of the background on which teachers built upon their experiences. During the implementation phase the interview helped the researcher identify difficulties and challenges the teachers were facing. This interview also helped teachers reflect on where they were in the process, and how well the tools were working for them. Interviewing teachers at the end helped the researcher construct a general understanding about the research and how Web 2.0 tools affected teaching practices and student collaboration. The tension of implementation procedures was over and teachers were able to reflect on their experiences from a holistic perspective.

Based on Yin's (2003b) recommendation, the questions in the teacher interviews were aligned with the research questions in order to generate meaningful interpretations. The research questions were listed and coded in Tables 2 and 3. The research question codes were indicated at the end of each question of the teacher interviews listed in Appendices C, D, and E. Certain interview questions relate to more than one research question. Based on Hatch's (2002) recommendation, the interview questions were written to be open ended, clear, and neutral.

Table 2

Coded Research Questions: Teaching Practices

Code	Research Question
RQ1	1. How can Web 2.0 (blogs, wikis, podcasts, and RSS) be integrated into teaching practices of English language teachers?
RQ2	2. How must teaching practices change to accommodate Web 2.0?
RQ3	3. Which Web 2.0 tools offer greatest academic potential? Why?
RQ4	4. What modifications must be introduced to improve the process?

Table 3

Coded Research Questions: Student Collaboration Behavior

Code	Research Question
RQ5	5. What are the collaboration patterns of student use of Web 2.0 tools outside of the classroom?
RQ6	6. How would student use of Web 2.0 tools within the classroom affect their attitude toward learning and engagement in class activities?
RQ7	7. What are the observable outcomes of student use of Web 2.0 tools?
RQ8	8. What future potential could be identified from this study?

Observation Field Notes

Observation field notes provided a record of behaviors in context. The researcher took an important role as a research instrument (Hatch, 2002; Maxwell, 2005) who recorded field notes while observing classes were being taught using Web 2.0 tools. The field notes included events taking place in class and online on blogs, wikis, podcasts, and RSS. RSS feeds tracked changes on blogs, wikis, and podcasts used by teachers and students. According to Merriam (2002), field notes recorded by the researcher help enrich post implementation teacher interviews when referring to contextual events that took place during the implementation phase. Teachers were also asked to record field notes for notable observations that they identify online or in class. The researcher observed both teachers and students. Consistent forms for observation field notes were created to accurately capture events. The teacher observation field notes form is included in Appendix F, and the researcher observation field notes form is included in Appendix G. Hatch (2002) recommended that the place should be indicated in field notes and thus a column for the place of observation, online or in class, was included on the forms.

Survey

According to Yin (2003a) and Maxwell (2005), surveys are used to collect opinion-based data from a large group of people. In order to capture in detail all participating students' experiences about using blogs, wikis, podcasts, and RSS in their English class, a survey questionnaire with open-ended questions was created based on the research questions. The student survey is included in Appendix H and was administered after the implementation phase. It helped reduce the time needed to interview all participating students in the two classes. Students were able to explain and reflect on how

Web 2.0 impacted the way they collaborate on topics studied in their English class. Students also had the chance to explain changes in their teacher's teaching practices. The survey included three sections. Section I collected general background information about the participating students. Section II collected information about how they used computers for school work and daily activities. Section III contained questions that relate directly to the research questions being investigated. The code of the research question was added at the end of each question.

Validity and Reliability

Qualitative researchers have developed strategies to establish validity and reliability of qualitative research instruments. According to Yin (2003a), construct validity is needed to establish correct operational measures of the case study being investigated. Data collection measures and the construction of interpretations and conclusions are crucial in this process. Sound data collection measures needed to be taken. All observations, changes in teaching practices, student collaboration, challenges, strategies, and reflections needed to be accurately captured and documented. Sources of evidence including interviews, observation field notes, and the student survey were designed to guarantee sound data collection measures to achieve construct validity. A group of three experts has reviewed the questionnaires for content validity. According to (Babbie, 2006), external validity is established when the findings are generalizable to other studies, yet this can only be achieved though analytical generalization of proposed theories and procedures followed. Yin (2003a) argues that one case study cannot be generalized to others since every case has its own conditions. External validity was

established by providing other researchers with sound research procedures, instruments, and logic that can be replicated in similar contexts.

According to Yin (2003a), reliability is established when errors and bias in data collection are minimized. Sound research design and carefully constructed data collection tools can lead to higher reliability of the study. Selective observations as well as bias were avoided by using critical thinking measures that prevent immediate generalizations. Based on clearly documented research procedures and data collection tools, this case study can be replicated in similar contexts to improve teaching practices and student collaboration in high school English classes.

Format for Presenting Results

Data collection tools used generated an extensive amount of information containing personal experiences of teachers, students and field notes recorded by the researcher. A narrative description was developed to report major findings in an attempt to answer the research questions. Findings were compared to documented research findings in the review of the literature. Although findings can never be generalized to all real life cases of using Web 2.0 tools in English language classes according to Yin (2003a), this study presented research-based guidelines for language teachers who see a potential of using Web 2.0 in their teaching and explored the challenges that teachers need to overcome when using such tools with their students. Identified benefits of using Web 2.0 tools in teaching may inspire teachers to implement such technologies based on modifications they need to introduce in their own environments.

According to Hatch (2002), the results of descriptive case studies can be organized by reducing data, displaying data, and drawing conclusions. Data reduction was done during the data collection phase as important data and patterns of interaction were identified. This process allowed for filtering out unnecessary data. It also helped organize and code important data. Organizing data into tables and meaningful graphs helped grouping and minimizing big amounts of text-based information. Data display assisted the researcher to focus on creating interpretations and generalizations. Drawing conclusions was the third and final stage of constructing meaningful interpretations and recommendations from the collected data. The results showed how Web 2.0 can be used to improve teaching practices. They also showed techniques for improving student collaboration in the English language class. The results also led to suggestions for further research. In addition, implementation strategies that worked were highlighted.

Resources

The author has worked for 12 years in 2 international schools in teaching IT, developing and delivering training to K-12 school staff, curriculum development, technology planning and implementation, and preparing accreditation documents. He has extensive experience in preparing workshops and has presented in local and international conferences. He has worked with teachers on designing multi-disciplinary units using technology as a tool for students to do group research, problem solving, constructive design, and presentation.

The International College (IC), an accredited K-12 international school that strives for innovation and creativity, provided full support. See Appendix B. More than 3,400 students are enrolled each year. The majority are of Lebanese citizenship while

25% of them hold foreign or dual nationality citizenships that presented 24 different countries in the 2006-2007 academic year. The teaching staff at secondary school faculty consists of 84 highly qualified teachers with 31% holding master's degrees and 7% holding doctorates (International College, 2007a). Information Technology resources including desktops, laptops, wireless connectivity, Interactive white boards, are abundant at IC. One-to-one setups are not available yet at International College, but the school is equipped with over 700 computers and laptops available through labs, libraries, study areas, and laptops. The mission of the school aims for excellence, effective communication, creative expression, and lifelong learning (International College, 2007b). All IT resources are meant to be used as tools for teachers and students to fulfill the school mission. Teachers are encouraged to innovate and develop new teaching methodologies to cater for the needs of today's students. IC follows closely standards-based education, and NETS for students and teachers by ISTE are the basis of the technology curriculum at the school. In addition, the on-going accreditation process requires the school to continually vary the methods of instruction (Council of International Schools, 2007).

Summary

This case study was supported by a mixture of the post-positivist and constructivist paradigms of qualitative research. Eight research questions were identified. Interviews with teachers, field notes of in-class and online interactions, and a student survey questionnaire were used to answer the research questions. All collected data were analyzed to define how Web 2.0 tools improved teaching practices and student collaboration in high school English language classes. A narrative description was

developed to report in detail the experiences of participating teachers and students. The findings may help teachers implement Web 2.0 tools into their teaching practices using research-based procedures.

Chapter 4

Results

The purpose of this chapter is to provide an objective presentation of the findings. The research needed two months to be completed in two grade 11 English classes with a total of 37 students and 2 experienced teachers. Teachers received training sessions during one week in which they explored the technicalities of creating blogs, wikis, and podcasts, and managing RSS feeds in their classes. Teachers filled three questionnaires: at the beginning of the study (Appendix C), during the implementation phase (Appendix D), and post the implementation phase (Appendix E). All 37 students filled one questionnaire (Appendix H) after the implementation phase was completed. The findings are presented in a descriptive narrative format.

Teachers' Questionnaires

RJ and PW are highly qualified English language teachers who have volunteered to use Web 2.0 tools in their classes. RJ has taught English for the past 15 years at the secondary school level and has a Master's Degree in English Language. She is comfortable in using the computer. She uses the computer regularly to prepare lessons and tests, do research, and locate educational resources on the web. She participates in online forums for teachers and uses email regularly to communicate with students and inform them about assignments and organizational aspects of instruction. She uses word

processors extensively in her teaching activities and has access to a smart board and a library with a full set of computers to accommodate all of her students when doing instructional activities and research. All of her students are comfortable in using the computer. Some are surface computer literate while others have engaged themselves in more in-depth applications. All of her students are well acquainted with social networking sites and are familiar with blogs.

PW has taught English for the past 12 years at the secondary school level and has a Master's Degree in English Language. He is a proficient computer user of office applications, publishing, and web design and maintains his own website for communicating with his students. He does his research and prepares lessons, presentations, and tests regularly using the computer. He participates in online forums for teachers and uses turnitin.com to check student papers for plagiarism. He uses the school computer labs for integration projects. His students are comfortable computer users. Though both teachers are experienced in teaching and have enough computer skills, they have never created WebQuests, hotlists, treasure hunts or Web2.0-based activities for their classes.

At the Beginning of the Study

Prior Teaching Methods. Teachers used lecturing, small group activities, and inquiry in their classes. RJ's strategy was to avoid the traditional approach of reiteration of content material. She described her teaching as student-centered in which students are provided with sets of skills to assess and acquire information to support curriculum.

Student Collaboration. Collaboration was ensured through class discussions and cooperative learning activities. The teacher initially sets the course of action and students

analyze texts from multiple perspectives. Inherent in this approach is a need to present popular culture connections and relevant specific cultural references as a necessity to engage learners in meaningful ways.

Student Assessment. Assessment in the English class is done through a variety of ways including formal and informal methods. PW uses holistic and analytical rubrics to assess essay writing. He also assigns projects and occasionally has students write reflections and journals. RJ sometimes uses traditional paper tests for comprehension and basic checks for reading, but the central vein of her assessment is broad and is dependent on engagement, effort, skills, and knowledge from content materials.

Professional Development. Professional development activities desired by RJ include the design and implementation of interactive multimedia. PW, on the other hand, needs to learn more about advanced desktop publishing, web design and publishing, and blogging.

Previous Knowledge about Web 2.0. PW was aware that Web 2.0 tools like blogs and wikis are based on open source and can be used to share information and to create communities of inquiry. Podcasting was new to him. RJ understood podcasting and blogging. Wiki was new to her. RSS was new to both teachers.

Previous Use of Web 2.0 Tools. Both teachers had not engaged in creating any Web 2.0 activities. PW confused the concept of open source software, like Moodle, for Web 2.0 tools. RJ believed that presenting a framework for students using blogs, wikis, podcasts, and RSS combined will be a new and exciting challenge for her.

During the Implementation Phase

Preparedness to Use Web 2.0 Tools. Both teachers agreed that learning how to use Web 2.0 tools was not difficult. It was a matter of exploration and following a guided process. Teachers used the tutorials embedded in blogger.com, wikispaces.com, mypodcast.com, and iGoogle for RSS feeds. During the training, both teachers preferred to use iGoogle as an RSS reader instead of bloglines since iGoogle uses the same username and password needed for blogger.com in order to access both services with one account. PW indicated that finding strategies to incorporate blogs in his teaching in order to promote student learning caused him to think carefully.

Adequacy of Using Web 2.0 Tools in Teaching. Both teachers found blogger.com, wikispaces.com, mypodcast.com, and iGoogle adequate for their classes. RJ indicated that these tools created an opportunity for growth and development. She found the Web 2.0 tools created a virtual space that was very useful when competing for time in short and closed face-to-face class periods. She found many benefits in using these tools in her classes. PW gave 20-minute hands-on sessions for his students at the start of each activity and found that these demonstrations were very helpful.

Technical Difficulties. RJ found that the interfaces of the Web 2.0 tools were user friendly and only minor issues were identified as is the case with anything new. Her students did not have any technical issues. PW did not indicate any technical difficulties while students were working at school. He explained though that many students preferred to work on the tools by themselves at home. Some of his students self-identified as technophobes, but fortunately, technologically savvy students volunteered to offer them help.

Effect on Teaching Practices. RJ indicated that the Web 2.0 tools allowed her to easily engage her students in collaborative activities. They also gave her the ability to manage a large number of students in collaborative activities, and that has been the *biggest surprise* to her. She indicated that RSS feeds facilitated her work a lot. PW indicated that instead of giving traditional in-class journal writing assignments, he was able to post a journal topic on his course blog and have students respond to the topic on their own blogs. A sample activity would be *Is Byron's poetry good poetry? Why or why not?* Students were required to post their reflections on their own blogs and to comment on each other's blogs.

Effect on the Quality of Teaching. RJ indicated that Web 2.0 tools *absolutely* helped her improve her teaching. She confirmed that, from now on, she will implement blogs, wikis, RSS feeds and podcasts in her lessons. PW indicated that Web 2.0 tools made him more efficient and paperless. He found out that blogging is the most powerful tool for expressing and sharing ideas. Wikis were useful to facilitate planning for group activities.

Difficulty Level. RJ did not find the tools difficult. She identified wikis as the *most powerful* tool for collaboration. Podcasts were time consuming for her to create and for her students to listen to. She identified RSS as a *brilliant* tool that made her life much easier. PW identified blogs as the easiest. Wikis were not difficult. For him, podcasts were more technical than wikis and were of limited use. He found them useful for creating interviews, speeches, and poetry recitals. Finally he identified RSS as the most difficult to explain to students. He needed more help with it and had requested that the researcher create a tutorial sheet to give to his students. The sheet, available in Appendix

I, was distributed to all of his students. His students needed his assistance in creating their iGoogle pages with the RSS feeds from blogs of classmates.

Effect on Students' Collaboration. PW explained that the Web 2.0 tools prompt more efficient student to student interaction than what is traditionally possible to achieve in a regular face-to-face classroom. RJ noticed that posting reflections, thoughts, comments, and ideas formalizes the process of contribution and this has increased the level of collaboration.

Assessing Students. Both teachers checked student contributions regularly. They evaluated the level and quality of contributions. Teachers used RSS feeds of student blogs in order to track changes to blogs and get notified about new posts.

The use of Web 2.0 Tools in Teaching. Both teachers have found blogs, wikis, podcasts, and RSS feeds useful in their teaching. The tools encouraged the expression of ideas, group work, sharing of knowledge. RJ explained that this project was an eye opener and gave her an edge for up-to-date teaching tools. Web 2.0 tools also attracted the attention of "at risk" learners and facilitated differentiated instruction by granting students control of their own blogs and wikis. Teachers' comments and feedback from peers allowed each student to establish a personalized learning environment that reflects personality and academic ability. Web 2.0 tools have also increased the level of motivation of all of her students toward English.

Post the Implementation Phase

Pros and Cons of Using Web 2.0 in Teaching. RJ noticed that student engagement and learning were tremendous in both content knowledge and literacy skills. Professionally, Web 2.0 tools enabled her to develop stronger organization skills and

differentiation in the teaching approach. It also helped her implement an environmentally conscious drive in less paper trails. PW noticed that Web 2.0 tools made sharing of ideas more efficient and paperless. They also connected the students to the world outside of school. PW explained that there is a learning curve for certain students who are challenged by technology or who are not familiar with the tools.

Effect on Teaching Practices. RJ explained that Web 2.0 tools allowed her to achieve exceptional levels of student engagement. There was a huge learning curve accompanying the implementation of these tools, but she accomplished multiple goals including improved general literacy, organizational skills, and research skills. PW has always used technology in his teaching and now has started asking students to write their journals on their own blogs, listen to class podcasts, and collaborate on group projects using wikis. RSS feeds have served as practical tools to summarize contributions on blogs and wikis.

Giving up Traditional Teaching Practices. PW confirmed that he would definitely give up paper journals. RJ said: "there is no turning back." Whenever possible, she would use Web 2.0 tools to expose students to the vast array of information technology tools available to allow them to compete with youth on a global level.

Observable Outcomes of Student Use of Web 2.0. RJ reported that Web 2.0 tools created a virtual space that lessened the gap between home and school. They also allowed for differentiated instruction by providing each student with a personalized learning environment. PW noticed that students in general, and shy students in specific, became more comfortable in sharing their opinions and responding to each others' comments.

Collaboration Tools. PW found that wikis offered the greatest opportunity for collaboration when doing group work and group projects. Blogs allowed students to write and share their ideas on a variety of subjects. RJ found that both blogs and wikis were highly interactive. Blogs formalized interaction through a published format. RSS feeds helped in organization. Podcasts allowed students to respond to audio prompts in a way similar to blogs.

How Web 2.0 Tools Were Used. Blogger allowed students to create their own blogs on which they posted their responses to teacher's prompts. Students were asked to comment on other students' posts. Wikispaces allowed students to engage in collaborative group work and brainstorming activities. The teacher's MyPodcast page allowed students to listen to poetry recitals posted by the teacher and post comments analyzing the poetry. RSS feeds, through iGoogle, allowed each student to create a personalized page incorporating RSS feeds of blogs of classmates and class wikis in addition to feeds of news, weather, sports, SAT question of the day, and GRE word of the day. Feeds helped to reinforce English language literacy. The teacher used RSS feeds to track student work and progress on blogs and wikis.

Student Collaboration and Attitude. In class, students worked to chunk responsibilities for project work. Students mostly used Web 2.0 tools outside the school. Web 2.0 tools created virtual spaces on which students collaborated outside school time. The open time and abundant Internet accessibility enabled students to collaborate while at home. RJ explained that by using virtual spaces created through blogs and wikis students became much more interested and less intimidated to participate in online discussions than in face to face discussions. According to PW, many technologically oriented

students got excited about sharing their ideas digitally. Technologically challenged students managed to overcome their fears and succeeded in collaborating with their classmates online.

Professional Development Needs. RJ indicated that it is essential to work with other English teachers on Web 2.0 projects. Teachers can benefit a lot from networking and can give and receive support. PW indicated that English teachers could benefit more by exploring ways to implement Web 2.0 tools into their teaching and applying them to learning.

Preference for Using Web 2.0 tools in Future Classes. Both teachers said that they will use blogs and wikis in their future classes. PW explained that he will maintain his own blog and post weekly prompts that allow students to respond using their own blogs. He will also keep on requiring students to comment on each others' blog posts. He explained that wikis can help in dividing students into small groups and assigning to each group a topic related to the book being read in class. Students then must brainstorm and collaborate in creating their reflections on their wiki space. PW enjoyed podcasting and made good use of it and will be using it in future classes He explained that he needs to improve his own understanding of the use of RSS feeds for learning. He will maintain his podcast site for archiving poetry, recitals, and interviews. He will require students to listen to podcasts and respond to them. RJ found RSS feeds very useful, yet considered podcasting a technically demanding activity. RJ confirmed that she will be using blogs, wikis, podcasts, and RSS feeds in her future classes because she has realized and is totally convinced now that the learning that has been taking place using Web 2.0 tools is far more effective than what can be offered by a teacher in a classroom only. She

explained that the world of information technology is too rich for educators in any subject area to dismiss.

Insights about Integrating Web 2.0 in Teaching. RJ finds that Web 2.0 tools are extremely useful and have great potential in teaching and learning in the English classroom. Teachers need to experiment more with Web 2.0 tools over time to reveal many of their potential applications. The investigation was an eye opener for RJ who will be exploring more uses of Web 2.0 tools in her classes. RJ has noticed that students seemed naturally engaged when working with Web 2.0 tools. They are a generation of online learners. All students need to experiment with these tools and have a chance to learn about new technologies used in teaching and learning. PW also found that Web 2.0 tools were useful for sharing ideas and connecting to the world. It was interesting for him to learn how to use blogs, wikis, podcasts, and RSS feeds in his classroom. His participation was a professional development opportunity through which he learned about new tools for teaching. He is interested in exploring more about Web 2.0 applications that promote better student learning.

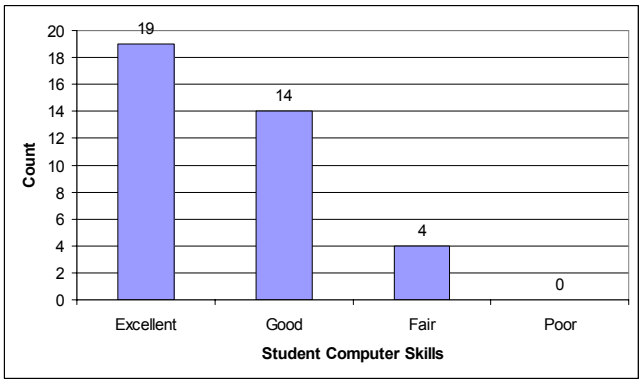
Student Survey

Student Information and Computer Use

Of the 37 grade-11 students, 20 were females and 17 male. All were comfortable in using the computer. Thirty four students use the computer on a daily basis while 3 use it a few times a week. Eighty nine percent of students reported having good to excellent computer skills. Four students reported fair skills and received help from their teacher and peers when each of the Web 2.0 tools was introduced. These students managed to complete all activities. Figure 2 shows the distribution of student computer skills.

Figure 2

Student Computer Skills (N=37)



All students have access to computers and the Internet at school and home. They use office applications in addition to encyclopedias for school work. Ninety two percent of students reported using the Internet for entertainment and social networking, and 73% of them used it for doing Internet-based research. Twenty four percent of students reported access to weather, sports, and news websites. As shown in Figure 3, students reported that they use computers for school work mainly for doing research, locating Internet resources, blogging, reading and commenting on blogs, completing assignments, studying, creating and editing wikis, communicating with classmates, and chatting with peers about lessons. Students spend less time on authoring, sharing, and downloading podcasts.

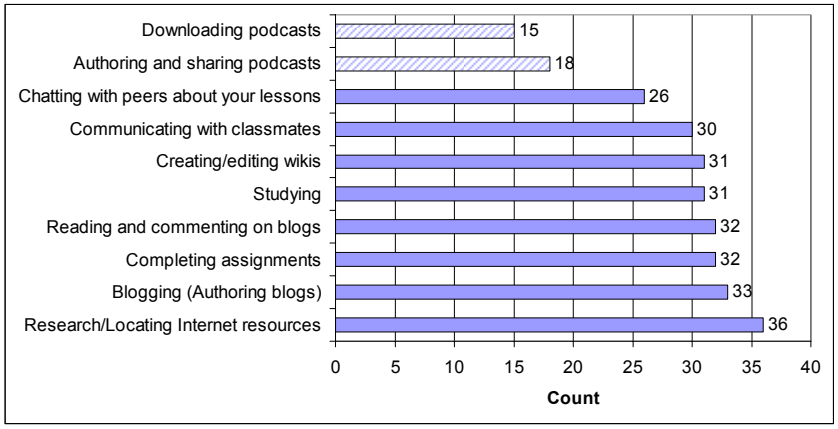
Teaching Practices Using Web 2.0

Changes in Teaching Practices of Teachers. Students reported that teachers introduced new types of class activities using blogs, wikis, podcasts, and iGoogle RSS feeds. Blogs and wikis were useful because they allowed them to engage in academic discussions with all classmates. Students became involved in the teaching process and sometimes taught each other. Teachers tended to set more strict deadlines than had been

set in the past. The teacher gave clear instructions online and no one had an excuse for not understanding the homework assignment as was often the case in traditional classes. All students were obliged to use computers and the Internet to complete projects which benefited those who avoid using computers for school work. Before Web 2.0, students were not as involved in each others' ideas and opinions. All notes are on the web available for students when they need to study for tests. The setup allowed students to have fewer restrictions hence making room for self expression on blogs. Web 2.0 tools made the English class more fun. With Web 2.0 tools, students managed to stay in touch with their teacher even during holidays. Students were proud that they were saving trees since they did not have to print their assignments.

Figure 3

Student Use of Computers for School Work (N=37)



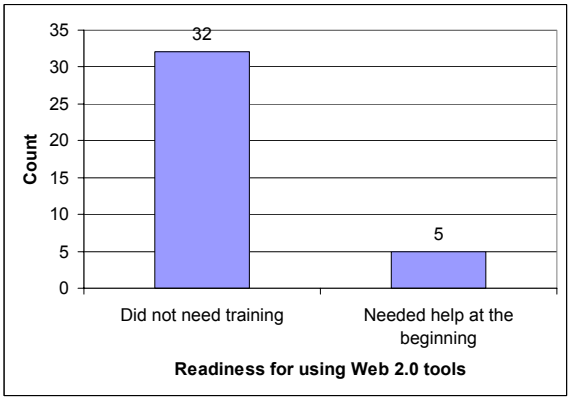
Changes in Student Collaboration Habits on English Projects. Students indicated that this new type of collaboration allowed them to communicate easily and exchange ideas and opinions better than before. It also allowed them to view and benefit from each others' contributions. Everyone's opinion was shared with the whole class and not just with a few, as is usually the case in class discussions that are limited to the available

time. Less time was needed for in-class face to face meetings, and information was easily shared on wikis and blogs. Wikis were efficient for they allowed dividing the workload among group members in a better way. Wikis saved a lot of time for managing group work. No emails, attachments, or papers were needed for group work; all information is shared on the wiki space. While commenting on each others' blogs, students developed their commentary writing skills and learned from each others. Students were able to work in their preferred environment at their preferred time. Comments on blogs allowed students to see what others thought about their writing.

Readiness of Students for Using Web 2.0 Tools. Thirty two students did not need computer training to participate in the Web 2.0 activities. The teacher introduced the activities and these students managed to continue on their own. Five students who had difficulties at the start of Web 2.0 activities received help from their savvy peers, and continued on their own.

Figure 4

Readiness of Students for Using Web 2.0 Tools (N=37)

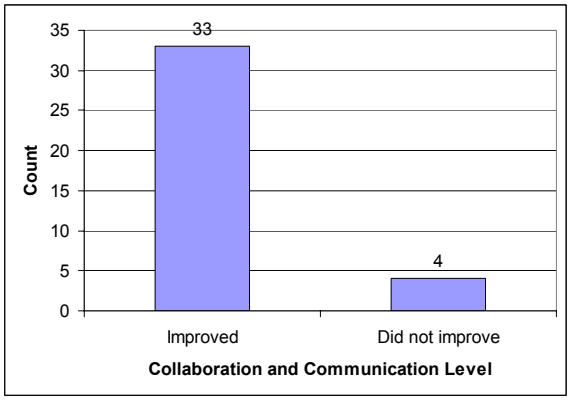


Effect of Web 2.0 Tools on Students' Collaboration and Communication Levels. Thirty three students reported that Web2.0 tools improved the way they communicate and

collaborate with each others. Four students reported that their level of communication and collaboration did not increase. Although the study took two months to complete, one of the four students mentioned that he needed more time to be able to determine if the collaboration increased or not. Figure 5 shows the distribution of collaboration and communication levels of students.

Figure 5

Effect of Web 2.0 Tools on Students' Collaboration and Communication Levels (N=37)



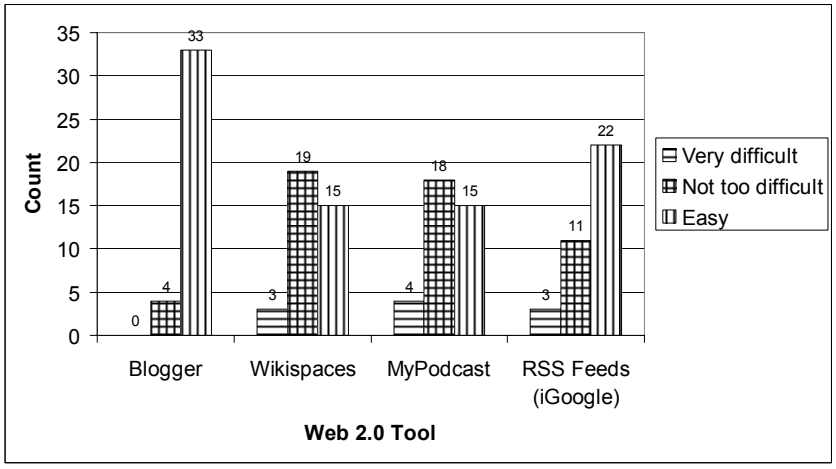
Effectiveness and Problems of Web 2.0 Tools. Students explained that blogs were good for learning about each others' opinions and points of view. Certain students had some difficulties in keeping tracks of the URLs of their classmates' blogs. Wikis were very useful for sharing ideas as a "virtual blackboard." They provided an efficient way for working in groups. On the other hand, sometimes others may delete what one has written on a wiki. Wikis are sometimes hard to use and do not work properly if several people are editing at the same time. Podcasts were very interesting because they allowed audio downloads. On the other hand, podcasts were hard to use. Recordings are sometimes not clear and take too long to download. RSS feeds were useful and fun for

receiving information and tracking many sites. It saved browsing time tremendously. On the other hand, RSS feeds were very difficult to manage at the beginning.

Ease of Use of Each of the Web 2.0 Tools. As shown in Figure 6, Blogger was the easiest tool to use by students. No one considered it very difficult. Wikispaces was considered not too difficult by 19 students which indicates that a learning curve was needed for students to use the tool. Similarly, MyPodcast was considered not too difficult by 18 students which indicates that a learning curve was also needed. RSS feeds were easy for almost half of the students while others had to go through a learning curve to be able to use them.

Figure 6

Ease of Use of Each of the Web 2.0 Tools (N=37)



Apprehensions Toward the Use of Web 2.0 in English Classes. Twenty eight students reported no apprehensions toward the use of Web 2.0 tools in the English classroom. Nine students reported various concerns listed as follows:

1 Difficulties were experienced when dealing with podcasts and RSS feeds.

2 More effort, time, and technical skills were needed in addition to thinking about the assignment.

3 One student was not comfortable with the fact that his assignments are shared with the world. He preferred a closed environment where only the class community has access to class blogs, wikis, and podcasts.

4 One student complained that Web 2.0 tools were complicated and required a high learning curve.

5 All Web 2.0 tools required Internet access, and one student complained that Internet access is not always available at all times in all places.

Effect of Web 2.0 on Students' Attitudes Toward English Classes. Only 3 students reported no change in attitude toward their English classes. Thirty four reported a positive change for various reasons highlighted in Table 4.

Table 4

Effect of Web 2.0 Tools on Students' Attitudes Toward English Classes (N=37)

Students' Attitudes Toward English Classes	**Count**
Positive Change in Attitude	**34**
Teaching and Learning Experience	
Effective use of modern technology	3
More interactive way of learning	2
Better learning experience	1
More modern way of learning	1
Made learning more global	1
Interaction/Collaboration Benefits	
Allowed for better sharing of thoughts and ideas	4
higher feedback rate from classmates	1

Students' Attitudes Toward English Classes	Count
Learning became more collaborative	1
Allowed for more group work	1
Allowed learning about others' opinions	1
Student Learning	
Broadened my perspectives	3
Posted assignments allowed me to revise better for tests	2
Allowed for critical thinking	1
More focused and organized	1
Gave more freedom	1
Become more involved in class	1
Allowed me to do more work	1
English Class	
Learning English became more interesting	7
Learning English became more fun	4
Learning English became easier	2
Allowed for a deeper analysis of the lesson	1
No Change in Attitude	**3**

More English Classes that Use Web 2.0. Twenty nine students reported that they would like to keep on using Web 2.0 tools in their English classes. On the other hand, 8 students preferred conventional methods of instruction due to various reasons:

1 Some students preferred traditional teaching methods

2 Certain students were distracted with the variety of applications on the Internet including social networking sites like *Facebook* and preferred not to use the computer when studying.

3 One student preferred face to face communications

4 More work was required although the tools were fun to use.

5 One student could not adapt to the new environment and preferred to go back to the traditional environment.

Recommended Use of Web 2.0 in Other Subjects. Thirty five students reported that Web2.0 tools can be integrated in other subjects including theory of knowledge, history, languages, humanities, economics, biology, chemistry, and information technology. Two students reported that they do not recommend Web 2.0 tools for other subjects. One of them said that he did not like the tools and would not recommend them for other subjects, while the other reported that other subjects require physical presence in class.

Observations During the Implementation Phase

This section provides a summary of the observations that were recorded by the researcher during the implementation phase. The study took two months to complete. It started on the 28th of February and ended on the 24th of April, 2008. The two participating teachers, RJ and PW, received one week of training on how to use and implement blogs, wikis, podcasts, and RSS feeds in the classroom at the beginning of the implementation phase. The tutorials provided on blogger.com, wikispaces.com and mypodcast.com served as a guide during the training. Teachers found that iGoogle was more appropriate than Bloglines.com as an RSS feed reader since iGoogle uses the same Google username and password used in blogger.com and thus no new accounts were needed. Using iGoogle made it easier for both students and teachers. This training period allowed teachers to explore the tools and set the initial goals for their projects. Below are the major observations or issues encountered and how they were solved by the teachers or the researcher.

1 The teachers requested to have a web page hosted on the school site to act as portal in order to host all links needed to access the various Web 2.0 activities. The page was constructed and published at http://www.ic.edu.lb/library/web20.htm Addresses were continuously added until the end of the study. A screenshot of this page is available in Appendix J.

2 The teachers requested to have a training blog and a training wiki created for students to use for practice before they contribute to their own blogs and class wikis. Training blogs and wikis were created to allow for practice. Addresses were published on the project page indicated above.

3 Teachers asked their students to create their own blogs. All addresses were collected by the teachers and then they were verified and published on the project webpage.

4 Three students, MB, CK, and HK, forgot their blogger.com passwords and needed to create new accounts.

5 The participating teachers posted activities on their blogs and students were asked to post their responses on their own blogs. A screenshot of PW's blog is available in Appendix K. Students were requested to comment on each others' posts and build on the ideas contributed. PW graded the quality of posts and comments on posts of others while RJ chose only to grade the quality of posts and encouraged students to comment on each others' posts. Some students were creative in adding profile photos, links to important websites, and images to illustrate their poetry. Interactions on blogs are

detailed in Tables 6, 7, 8, and 9. A screenshot of a student blog is available in Appendix L.

6 CK, OT, and TB needed help and received assistance from their classmates. Help was offered during classes and breaks.

7 Unlike RJ, PW faced some difficulties in explaining the use of iGoogle RSS feeds to his students in his class and requested an instruction sheet to guide students. The sheet, available in Appendix I, was prepared and distributed to all students. Appendix M shows a sample iGoogle page of a student with embedded RSS feeds of the teacher's blog, podcast of the school newsletter "Makhloutah", Merriam-Webster's word of the day, technology news, and the Gmail inbox.

8 On class wikis, RJ and PW created several pages on which they added questions for reflections about the text being studied. Students were assigned to groups and were asked to contribute on the class wiki. Each group was assigned a page on the wiki. Edits on the class wikis of both teachers are listed in Table 10 and Table 11. A screenshot of PW's wiki is available in Appendix N.

9 After an introduction about podcasting by PW, two students, DW and TM, created a podcast for the school magazine called "*Makhloutah"* that was a big success among students. Teachers were amazed since students managed to create their own podcast before the teacher uploaded the class podcasts. The link to the podcast along with the teacher's podcast was shared on the Web 2.0 project page.

10 Both teachers, RJ and PW, invited a Canadian poet called Antony Di Nardo, to read poems that are related to the theme being studied in class. PW posted the audio recordings of the poet on the class podcast page. Students in both classes were asked to listen and reflect on the audio recordings while making connections to the lesson they are studying in class. A screenshot of the podcast page is available in Appendix O.

11 Podcasts were sometimes hard to access due to bandwidth issues. PW did his best to make sure that posted recordings were short and straight to the point. RJ was not comfortable recording her voice and publishing it online.

Blog Interaction Patterns

PW and RJ posted questions on their blogs and required students to post their responses on their own blogs. PW graded the quality of posts and comments on posts of others. RJ preferred to encourage posting and commenting on blogs but chose only to grade the quality of posts.

As shown in Table 5, in PW's class, there was an average of 10 posts per student with a maximum of 19 posts by HI and a minimum of 7 posts by DM, HC, and DK. Most of the posts were academic with the exception of 3 students, MB, DW, and HI, whose posts were both academic and personal. Many students included profile photos. They also included images in their posts. Some students included news links, slideshows, categories, or a brief description about the owner of the blog.

Table 5

Summary of Blogs of Section 1 – Teacher: PW

Student Code	Blog URL	No. of Posts	Type of Posts **A**: Academic **P**: Personal **AP**: Academic and Personal	Blog Features
TA	http://tanjareen.blogspot.com	14	A	photo, images in posts
BA	http://beyhan-english.blogspot.com	12	A	photo
MA	http://myralana.blogspot.com	13	A	photo, colored posts
MB	http://prodigykid666.blogspot.com	9	AP	photo, news links, slideshow, photos from school
NC	http://noursblog-nour.blogspot.com	12	A	photo
TD	http://tracyisblogging.blogspot.com	8	A	photo, images in posts
DM	http://dima-m.blogspot.com	7	A	photo
SV	http://www.sirena-v.blogspot.com	8	A	photo
DW	http://davidpreppy.blogspot.com	10	AP	photo, images in posts
RZ	http://boredibbloggerblog.blogspot.com	8	A	None
HC	http://vivelecanadaourah.blogspot.com	7	A	photo
AH	http://english-aya.blogspot.com	8	A	None
HI	http://thegreatestblogevercreated.blogspot.com	19	AP	Photo, about me, polls
AK	http://byebyenails.blogspot.com	9	A	None
HKF	http://www.ibhk.blogspot.com	8	A	slideshow, categories
CK	http://solemnbookworm.blogspot.com/	10	A	about me
DK	http://danakhalil.blogspot.com	7	A	photo, images in posts
TM	http://tanya-sobritish.blogspot.com	8	A	photo, images in posts
MS	http://melmagblog.blogspot.com	8	A	photo, news links, slideshow
Average		**10**	**A=16, AP=3**	

In PW's class, many students established discussions on their blogs. Each student received an average of 16 comments from 11 unique peers per blog. Most of the comments contained a mixture of academic and personal messages with the exception of 3 students who received only academic messages. Each student wrote an average of 15

comments on the blogs of peers during the two month period. The summary of blog posts, comments and interactions of PW's class is shown in Table 6.

Table 6

Summary of Blog Posts, Comments and Interactions of Section 1 – Teacher: PW

Student Code	No. of Posts	No. of Received Com-ments	No. of Unique Peers who Commented on the Posts	Type of Comments: **A**: Academic **P**: Personal **AP**: Academic and Personal	No. of Received Com-ments on Blogs of Peers	Students who Commented on the Blog
TA	14	14	12	AP	16	DM, NC, HKF, MA, MA, AH, RZZ, PW, BA, HC, AK, CK, TD, RZZ
BA	12	14	10	A	25	TM, SV, MS, HKF, SV, BA, MA, MS, TM, SM, MS, NC, TA, HC
MA	13	21	12	AP	22	RZZ, DM, DK, TA, NC, AH, DK, BA, DM, TA, NT, AK, MB, HI, AH, NC, DK, NT, DK, BA, TM
MB	9	5	4	AP	8	HKF, HKF, BA, SV, TA
NC	12	18	12	AP	15	RZZ, MA, MA, HKF, DM, HI, BA, DM, MA, TA, HC, NC, DM, AK, RZZ, DK, BA, SV.
TD	8	16	13	AP	14	HI, DK, DM, HKF, DW, RZZ, TM, DW, DK, NC, CK, AH, TD, MS, TM, MA
DM	7	18	13	AP	15	MA, NC, RZZ, MA, TM, HI, RZZ, NC, TA, MA, RZZ, HC, DM, SV, TD, AH, AK, CK
SV	8	22	14	AP	25	BA, MS, HKF, BA, MS, HC, TM, NC, BA, HC, AK, HC, HKF, HC, DM, TD, AH, SV, AK, HI, DM, CK.
DW	10	12	9	AP	12	AH, HI, HC, TM, SV, CK, TD, TM, MB, AK, CK, TM.
RZ	8	14	11	AP	11	MA, NC, DK, BA, MS, TD, TM, AH, DM, MS, DK, TA, TA, HC.
HC	7	19	14	AP	12	AH, HI, SV, AK, HKF, SV, MS, AK, TA, DM, SV, TD, SV, DW, MB, BA, PW, NC, SV
AH	8	13	9	AP	16	DW, TA, RZZ, BA, HKF, TA, HKF, TA, TD, RZZ, CK, AK, AH.

Student Code	No. of Posts	No. of Received Com-ments	No. of Unique Peers who Commented on the Posts	Type of Comments: **A**: Academic **P**: Personal **AP**: Academic and Personal	No. of Received Com-ments on Blogs of Peers	Students who Commented on the Blog
HI	19	22	10	AP	14	DK, BA, HKF, SV, DK, BA, BA, MS, SV, BA, MS, SV, MS, SV, CK, SV, BA, NC, AH, MB, SV, HKF, DM.
AK	9	16	10	AP	12	MA, PW, CK TM, MA, DW, CK, HC, MA, MA, HI, DW, DM, MB, NC, DW
HKF	8	25	16	AP	19	MS, TB, SV, HKF, HI, SV, AH, BA, TD, MA, TB, HKF, MB, NC, DK, TA, TD, MS, CK, MB, TM, MB, AH, SV, MA.
CK	10	6	5	A	13	PW, MS, DW, HI, MA, MS.
DK	7	19	12	A	14	TD, HI, MS, TA, DM, NC, TD, BA, MA, CK, HKF, HI, AH, TM, MA, AH, CK, MA, TD.
TM	8	18	13	AP	12	MA, BA, AK, DW, BA, AH, DW, MS, BA, TA, RZ, DK, HC, HKF, DW, HKF, DW, AK.
MS	8	15	9	AP	18	PW, SV, SV, TD, RZ, DK, SV, BA, TA, HKF, BA, HI, RZ, HI, RZ.
Average	**10**	**16**	**11**	**A=3, AP=16**	**15**	

As shown in Appendix P, in RJ's class, there was an average of 4 posts per student with a maximum of 16 posts by NT and a minimum of 2 posts by TBI, OM, RN, and AZ. All of the posts were academic. Some students included profile photos, images in their posts, news links, slideshows, favorite books, or a brief description about the owner of the blog.

In RJ's class, each student received an average of 3 comments from 2 unique peers per blog. Six of the blogs contained academic comments only, 4 contained a mixture of academic and personal messages, and 4 contained only personal messages. Each student wrote an average of 2 comments on the blogs of peers during the two month

period. The summary of blog posts, comments and interactions of RJ's class is shown in Table 7.

Table 7

Summary of Blog Posts, Comments and Interactions of Section 2 – Teacher: RJ

Student Code	No. of Posts	No. of Received Com-ments	No. of Unique Peers who Commented on the Posts	Type of Comments: **A**: Academic **P**: Personal **AP**: Academic and Personal	No. of Received Com-ments on Blogs of Peers	Students who Commented on the Blog
NA	3	6	5	A	2	NT
AA	3	0	0		2	HKF, DM
TBI	2	1	1	AP	0	NT
TBO	3	2	2	P	2	
JJK	2	1	1	P	2	NT, KZ, SM, ZS, PK, HK, AA
JJR	4	0	0		0	RJ, AO, KZ, JJK
RJ	3	7	7	A	3	KZ, RJ, ZS, HK, NE, RN, AA
HK	3	4	4	A	2	BA
PK	3	7	7	A	3	
SM	4	2	1	P	2	
OM	2	0	0		0	AH, OT, RN
RN	2	0	0		2	RJ, PK
AO	2	3	3	AP	2	AO, RJ
ZS	5	2	2	AP	2	MA
OT	2	2	2	A	1	NE, TB
NT	16	1	1	P	5	NT, SM, PK, JJK, RJ, AZ
AZ	2	2	2	A	2	NT
KZ	5	6	6	AP	1	HKF, DM
Average	**4**	**3**	**2**	**A=6, AP=4, P=4**	**2**	

Wiki Collaboration Patterns

Each of the teachers created a class wiki. They divided their classes into groups of 4 to 5 students. Each group was assigned a theme with a set of questions. Members of the group were asked to contribute to the class wiki under their assigned page. Invitations were sent by the teachers to all participating students to join the wiki and start working on the activities. The duration of contributions and the number of edits of each student of

both teachers are listed in Appendix Q and Table 8. A screenshot of PW's wiki is available in Appendix L. In both classes, contributions and edits were done in a random fashion with no specific pattern.

Table 8

Summary of Wikis of Section 2 – Teacher: RJ

Student Code	No. of Edits	Duration of Edits in Days
RJ	5	21
HK	3	7
KZ	15	21
SM	7	8
NT	5	6
PK	3	20
JJR	4	1
NA	5	21
ZS	12	20
AZ	1	1
TBO	2	1
Average	**5**	**12**

Summary of the Results

This case study investigated how Web 2.0, including blogs, wikis, podcasts, and RSS feeds can change teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom. Data were collected through three teacher interview questionnaires at the beginning, during, and post the implementation of Web 2.0 tools in the classroom. Observations were recorded throughout the implementation phase. Students were also surveyed about their experiences with Web 2.0 tools at the end of the implementation phase. The data collected provided comprehensive answers for the research questions that will be addressed in chapter five.

Academic Potential of Web 2.0 Tools

Most students did not need computer training to participate in the Web 2.0 activities. Five students reported difficulties at the start of each activity. Help was mostly provided by their savvy peers. Blogs were the easiest to create and use. They helped students learn about each others' opinions and points of view. Wikis allowed students to engage in collaborative group work and brain storming activities. The wiki was identified by teachers as the most powerful tool for collaboration. MyPodcast allowed students to listen to poetry recitals posted by the teacher and post comments analyzing the poetry. In addition to feeds of news, weather, sports, SAT question of the day, and GRE word of the day, RSS feeds helped students stay updated about new changes in their blogs and sites of interest which indirectly helped them enhance their English language literacy.

Teaching Practices and Web 2.0 tools in English Language Classroom

Web 2.0 tools were actively used by teachers and students. Short hands-on sessions with the students at the start of each activity were very useful. Students were required to use computers and the Internet to complete projects. Teachers used blogs to replace journal writing assignments and to encourage students to interact and share thoughts and ideas. Teachers directed student to post reflections, thoughts, comments, and ideas in order to formalize the process of contribution and increase the level of collaboration. Wikis provided teachers with an appropriate environment for collaboration. Students worked in groups to create responses to teachers' questions. Podcasts allowed teachers to share poetry recitals with their students while RSS feeds of student blogs allowed teachers to track changes and get notified about new posts. The results showed that teachers became facilitators for student interaction and collaboration

in the English classroom. The record keeping nature of Web 2.0 tools allowed teachers to control deadlines for class assignments.

Suggested Implementation Strategies

Teachers recommended that a unified account for all tools could have been more practical for students and teachers. A portal page containing links to all student and teacher blogs, wikis, and podcasts to serve as a reference point for all was needed to facilitate the exchange of links with students. Teachers suggested that networking with other teachers who are using Web 2.0 tools could have helped them share implementation strategies. It was also reported that Web 2.0 tools could be used separately over a long period of time. Presenting a framework for students using blogs, wikis, podcasts, and RSS within a period of two months was a challenge for the teachers although tool mastery was not difficult.

Effect on Student Collaboration and Attitudes

One-to-one and one-to-many student interactions increased because they were not limited to face-to-face interaction opportunities during timed class discussions. Students were able to post their own poetry and analyses of texts and learn from each others' writings. They also developed an interest in learning about what others thought about their own writing and not just their teachers. Students used wikis to divide the workload among group members in a more organized way. Web 2.0 tools allowed them to work in their preferred environment at their preferred time.

Teachers noticed that shy and at-risk students became more comfortable in sharing their opinions and responding to each others' comments online. Thirty four students reported positive changes including effective use of modern technology, more

interactive way of learning, better sharing of ideas and opinions, higher feedback rate from classmates, higher critical thinking skills, and easier and fun way of learning English.

Observable Outcomes

Teachers achieved exceptional levels of student engagement. They also accomplished multiple goals including improved language literacy, organizational skills, student engagement, and research skills. Web 2.0 tools allowed teachers to develop stronger organization skills and better differentiation in the teaching approach. The online nature of the tools also allowed teachers to implement an environmentally conscious learning environment by using fewer paper trails. Students were actively engaged in a virtual space that lessened the gap between home and school while maintaining a larger number of students in collaborative activities.

Students were proud to save trees since they did not have to print their assignments. At the end of each activity, students managed to create a set of online notes from contributions on wikis and blogs that became very useful for reviewing for English exams. The Web 2.0 tools allowed students to study in a fun way with fewer restrictions which enabled greater self expression.

Two limitations that were beyond the researcher's control and that might have affected the outcomes were identified. Although computers with Internet access were available to students in the computer lab and the library, some students had more abundant Internet access than others. Certain students possessed personal wireless devices like mobile phones and Portable Digital Assistants. All students were encouraged to use any available Internet connection whether at school or at home. Access to podcasts

proved to be problematic for some students due to the bandwidth required to access audio recordings. Another limitation was that participating teachers were not compensated for the extra time and effort that they needed for this project. On the other hand, they have confirmed that they will use Web 2.0 tools in their future classes. Two delimitations that were beyond the researcher's control were also identified. Teachers and most students were skilled in using the Internet; therefore, the outcomes might not be typical in other classes or schools with different levels of computer skills and Internet access facilities. Another delimitation was that Web 2.0 tools are fairly new on the Internet. Their specifications and capabilities have been changing with time; therefore, generalizations made in this study may only apply to the current era of the Internet.

In conclusion, participating teachers decided to use blogs, wikis, podcasts, and RSS feeds in future classes. Requiring students to post on their blogs and comment on posts of others was important to create an interactive environment. Future group work can be more effectively done using wikis. Podcasting was effective for publishing poetry recitals, and interviews. Web 2.0 tools may benefit teachers of all subjects.

Chapter 5

Conclusions, Implications, Recommendations, and Summary

Conclusions

Today's students live in a media-rich environment. They are engaged in electronic communications using a variety of technologies such as email, instant messaging, chatting, personal blogs, and short text messages. Today's students expect learning to take place using modern digital communication tools (Oblinger & Oblinger, 2005; Chen, 2005). The recent development of Web 2.0 tools including blogs, wikis, podcasts, and RSS have created a new generation of websites that are centered around user participation. Web 2.0 tools allowed users around the globe to contribute to the creation of online content (Richardson, 2006). Using these tools in teaching has become a major challenge for educators. This case study examined how Web 2.0, including blogs, wikis, podcasts, and RSS can affect teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom. The data collected from 2 grade-11 English classes with a total of 37 students and 2 experienced teachers allowed for answering the eight research questions in two areas of inquiry: *Teaching Practices* and *Student Collaboration Behavior*.

Teaching Practices

1 *How can Web 2.0 (blogs, wikis, podcasts, and RSS) be integrated into teaching practices of English language teachers?*

Traditional instructional practices included lecturing, small group activities, and inquiry. Web 2.0 tools provided teachers with a strategy to avoid the traditional approach of reiteration of content material by creating a student-centered learning environment in which students are provided with sets of skills and tools to interact and collaborate. Blogs were major tools that allowed students to interact and share thoughts and ideas while wikis provided an appropriate environment for collaboration that allowed students to work in groups to create responses to teachers' questions. Teachers indicated that instead of giving traditional in-class journal writing assignments, they were able to post a journal topic on their course blogs and have students respond to the topic on their own blogs. A sample activity was "Is Byron's poetry good poetry? Why or why not?" Students were required to post their reflections on their own blogs and to comment on each other's blogs. Using podcasts, teachers shared audio recordings with their students, yet listening to podcasts was a bit problematic to students and some students complained that they did not have the appropriate bandwidth to download big audio files. Teachers checked student contributions regularly. They evaluated the level and the quality of contributions. They used RSS feeds of student blogs in order to track changes to blogs and get notified about new posts.

Assessment in the English class was done through a variety of ways including formal and informal methods. Teachers used holistic and analytical rubrics to assess student writing. Teachers assigned projects and had students write reflections and journals. Teacher sometimes used traditional paper tests for comprehension and basic checks for reading. The central vein of their assessment was broad and dependent on

engagement. Web 2.0 tools were integrated within classroom activities and teachers did not find a need to change their formal assessment practices.

2 How must teaching practices change to accommodate Web 2.0?

Teachers found blogger.com, wikispaces.com, mypodcast.com, and iGoogle-based RSS feeds adequate for their classes and created an opportunity for growth and development. Teachers found many benefits in using these tools in their classes by allowing them to easily engage their students in interactive and collaborative activities. Blogging was considered an easy tool for all students. Collaborating through wikis and listening to podcasts was considered not too difficult by half of the students. RSS feeds were easy for almost half the students. It can be concluded that wikis, podcasts, and RSS feeds required students to go through a learning curve in order to use them properly. Teachers needed help in introducing the tools to students and found that short hands-on sessions with the students at the start of each activity were very useful.

Teachers explained that the Web 2.0 tools prompt more efficient student to student interaction than what was traditionally possible to achieve in a regular face-to-face classroom. Thus, teaching must be changed to allow for more of these activities to be included in teaching practices. Teachers also noticed that posting reflections, thoughts, comments, and ideas formalized the process of contribution and has increased the level of collaboration. This process helped teachers become more efficient.

Teachers tended to set more strict deadlines than what they used to set in the past. Teachers gave clear instructions online, and no student had an excuse for not knowing what the homework was as is usually the case in traditional classes. The recordkeeping features of Web 2.0 tools helped teachers to control deadlines and students to stay on

track. All students were obliged to use computers and the Internet to complete projects which benefited those who avoid using computers for school work. Web 2.0 tools provided a connection between school work and students' capabilities in using the Internet. For teachers, Web 2.0 tools created a virtual space that extended closed face-to-face class periods with online interactions. The online learning environment created by these tools expanded the possibilities of interaction and collaboration in the English classroom. Teachers need to create and manage such virtual spaces to increase the potentials of their classes and meet the needs of their students.

PW graded the quality of posts and comments on posts of others while RJ chose only to grade the quality of posts and encouraged students to comment on each others' posts. The effect of this fact was reflected in the number of posts and comments as shown in Table 9 and Figure 7. PW had an average of 10 posts per student while RJ had only 4 posts per student. Consequently, the average number of received comments, the average number of unique peers who commented on posts, and the average number of comments on blogs of peers in PW's classes were significantly higher than RJ's.

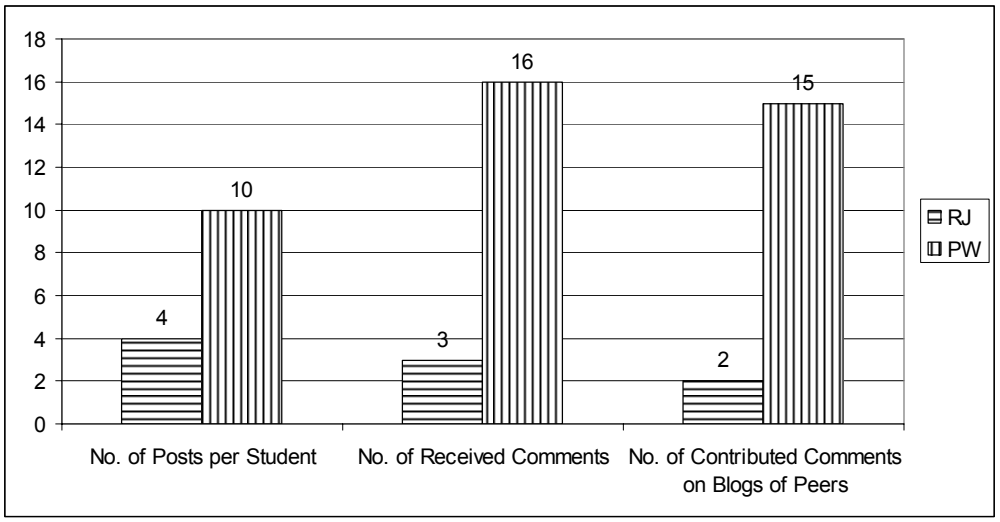
Table 9

Blog Posting Patterns in the Classes of PW and RJ

Teacher Initials	Average No. of Posts per student	Average No. of Received Comments per student	Average No. of Unique Peers who Commented on the Posts	Average No. of Comments on Blogs of Peers
PW	**10**	**16**	**11**	**15**
RJ	**4**	**3**	**2**	**2**

Figure 7

Blog Posting Patterns in the Classes of PW and RJ



3 Which Web 2.0 tools offer greatest academic potential? Why?

Most students did not need computer training to participate in the Web 2.0 activities. Teachers introduced the activities and students managed to continue on their own. Five students had difficulties at the start of each Web 2.0 activity, then they received help from their savvy peers.

Blogger allowed students to create their own blogs on which they posted their responses to teacher's prompts. Students were asked to comment on other students' posts. Blogs were the easiest to create and use. For students, blogs were good for learning about each others' opinions and points of view. Wikispaces allowed students to engage in collaborative group work and brain storming activities. The wiki was identified by teachers as the "most powerful tool for collaboration". It was not difficult to create and manage. Teachers had the flexibility to carefully track edits in order to be able to assess contributions accurately. MyPodcast allowed students to listen to poetry recitals posted by the teacher. Students posted comments on published podcasts analyzing the poetry.

Podcasts allowed students to respond to audio prompts in a way that is similar to blogs. Sometimes, teachers considered podcasts time consuming to create and to listen to. RSS feeds, through iGoogle, allowed students to create a personalized page where they incorporated RSS feeds of blogs and wikis of classmates in addition to feeds of news, weather, sports, SAT question of the day, and GRE word of the day. Feeds helped to reinforce English language literacy. The teacher used RSS feeds to track students work and progress on blogs and wikis. One teacher identified RSS as a "brilliant" tool that made her life much easier and saved browsing time tremendously.

4 What modifications must be introduced to improve the process?

The participating teachers were never engaged in creating any Web 2.0 activities before. Presenting a framework for students using blogs, wikis, podcasts, and RSS combined was thought to be a new and exciting challenge for the teachers, yet learning how to use Web 2.0 tools wasn't difficult for them. It was a matter of exploration and following a guided process. Teachers used the tutorials embedded in blogger.com, wikispaces.com, mypodcast.com, and iGoogle.

Five students considered Web 2.0 tools complicated and required a high learning curve. This was acknowledged by teachers who encouraged peer support. Teachers reported that support from peers was very helpful and adequate. One student was not comfortable with the fact that blogger and wikispaces exposed his assignments to readers and contributors around the world. A closed environment where only the class community has access to class blogs, wikis, and podcasts could have been better to use with students. A technology-challenged student complained that more effort, time, and technical skills were needed in addition to thinking about the assignment. More training

for students can help eliminate this issue. Certain students had some difficulties in keeping track of URLs of their classmates' blogs. A web page was made available to teachers and students with all URLs needed for all activities. Teachers continuously updated the content of this webpage.

Teachers preferred to use one account to access all tools. That was not possible since not all tools can be found in one site. It was considered a challenge to ask students to memorize different usernames and password for each of the tools. Fortunately, students were acquainted with online account creation which facilitated this task a lot. A system that offers all tools in a single account could have been better for both students and teachers.

Teachers were interested in networking and sharing ideas with other English teachers about the use of Web 2.0 in the curriculum. Teachers can support each others and learn from each others' experiences. English teachers suggested that they can benefit a lot by exploring more ways of implementing Web 2.0 into their teaching.

Student Collaboration Behavior

5 *What are the collaboration patterns of student use of Web 2.0 tools outside of the classroom?*

Web 2.0 tools allowed students and teachers to communicate and easily exchange ideas and opinions better than before. Blogs allowed students to post their poetry and analyses of texts and benefit from each others' writings. Everyone's opinion was shared openly and was not limited to the number of students interacting in face-to-face class discussions. Comments on blogs allowed students to see what others thought about their own writing. Wikis were efficient for they allowed dividing the workload among group

members in a better way than what is traditionally done. Wikis saved a lot of time for managing group work. No emails, attachments, or papers were needed for group work; all information is shared on the wiki space. Less time was needed for face-to-face class meetings and information was easily shared on wikis and blogs. While commenting on each others' blogs, students developed their commentary skills and learned from each others. Students were able to work in their preferred environment at their preferred time.

Thirty three students reported that Web 2.0 tools improved the way they communicate and collaborate with each others. Only four students reported no increase in collaboration. Students with difficulties were helped by their classmates and managed to complete all activities on time. Customized training for specific students with difficulties in using technology could remedy this issue.

6 *How would student use of Web 2.0 tools within the classroom affect their attitude toward learning and engagement in class activities?*

In class, students worked on assigning responsibilities for project work then used Web 2.0 tools outside the school for interaction and collaboration. Web 2.0 tools created virtual spaces on which students collaborated and shared ideas. Students learned a lot about each others' opinions and analytical capacities. The open time and ubiquitous Internet access enabled students to collaborate while at home. Students became less intimidated to participate in online discussions than in regular class discussions. Many technologically oriented students got excited about sharing their ideas digitally. Technologically challenged students received help from their peers to overcome their fears and collaborate online. Teachers noticed that *shy* and *at-risk* students became more comfortable in sharing their opinions and responding to each others' comments.

Only 3 students reported no change in attitude toward their English classes. Thirty four reported a positive change for various reasons. Web 2.0 tools allowed students to experience an effective use of modern technology, a more interactive way of learning, a better learning experience, and a global learning environment. Students enjoyed an interactive and collaborative environment when the Web 2.0 tools allowed for better sharing of thoughts and ideas, higher feedback rate from classmates, more collaborative learning, more group work, and more sharing of opinions. Sharing thoughts and ideas broadened their perspectives and allowed them to develop their critical thinking skills. Posted assignments allowed students to use the materials posted collaboratively by all students as revision materials for tests. Web 2.0 tools helped teachers and students stay on track, focused, and organized. They gave students more freedom. This environment allowed students to become more involved in class and do more work. According to students, the English class became more interesting, more fun, and much easier than before and allowed them to go deeper in analyzing the studied topics.

7 What are the observable outcomes of student use of Web 2.0 tools?

Teachers explained that Web 2.0 tools allowed them to achieve exceptional levels of student engagement. Although it took some time for the teachers and students to learn how to use Web 2.0 tools, both teachers and students felt that these tools improved students' language literacy, organizational skills, student engagement, and research skills.

Professionally, Web 2.0 tools enabled teachers to develop stronger organization skills and differentiation in the teaching approach. It also helped teachers implement an environmentally conscious learning environment by using fewer paper trails. Students were proud that they were saving trees since they did not have to print their assignments.

Web 2.0 tools created a virtual space for each student that lessened the gap between home and school. They also allowed for differentiated instruction when students were given full control over their blogs, wikis, and RSS feeds. Comments and feedback from peers and teachers allowed each student to establish a personalized learning environment that reflects personality and academic ability. Web 2.0 tools allowed teachers to manage a larger number of students in collaborative activities than what was previously possible, and that was the "biggest surprise" to them.

All student contributions on wikis and blogs created a set of online notes that became very useful for reviewing for English exams. The setup allowed students to have fewer restrictions, hence making room for self expression. Web 2.0 tools made the English class more fun. Students managed to stay in touch with their teacher even during holidays.

8 What future potential could be identified from this study?

Teachers found that Web 2.0 tools were very useful for their classes and they will use blogs, wikis, podcasts, and RSS feeds in future classes. Teachers used blogs to post weekly prompts that allowed students to respond on their own blogs. Requiring students to post on their blogs and comment on posts of others was important to create an interactive environment. Teachers divided students into small groups and assigned to each group a topic and a set of questions related to the book being read in class. Students collaborated on creating their responses and reflections on their wiki space. Teachers enjoyed podcasting and made good use of it and will be using it in future classes for publishing poetry, recitals, and interviews. One teacher expressed a need to improve his own understanding of the use of RSS feeds for learning.

Teachers realized that with Web 2.0 tools learning became more effective than before. The classroom was expanded with virtual spaces where students can learn, interact, and collaborate. They also found that educators in all other subjects can benefit from this technology. Many students reported that they would like to continue using Web 2.0 tools in their English classes as well as other subjects including theory of knowledge, history, languages, humanities, economics, biology, chemistry, and information technology.

Integrating Web 2.0 Tools in Teaching

Web 2.0 tools allowed teachers to avoid the reiteration of content material and helped them create a student-centered learning environment. Teachers replaced old methods of assigning paper-based journal writing assignments with blogs on which students write their thoughts and poetry and exchange comments with all classmates. The wiki was the tool of choice for managing group work. Students in small groups were assigned wiki spaces on which they contributed their knowledge to complete the assigned task. Teachers evaluated the level and quality of contributions. Blogs and wikis allowed teachers to extend class discussions with online discussions on which all communications are appropriately documented and tracked. Teachers used their regular formal assessment techniques using rubrics and paper tests. Requiring student participation is important to enhance learning (Smaldino, Russell, Heinich, & Molenda, 2008). Cognitive learning theorists including Gagné (1985) supported the principle that active user participation and manipulation of information are needed to satisfy effective conditions for student learning. Teachers achieved higher levels of participation when posting was required and graded.

Four Web 2.0 websites were used: Blogger.com, Wikispaces.com, MyPodcast.com, and iGoogle. Teachers and students created their own blogs. Teachers created class wikis and invited their students to edit their group pages. Teachers also created a podcasting page on MyPodcast. Therefore, there were many URLs to be shared with students. This necessitated the creation of a web page that contained all links for the convenience of students and teachers. It is recommended that a portal or a teacher's website accompany the introduction of Web 2.0 tools with students because there are many links to be shared. On the other hand, teachers were worried about the many various usernames that needed to be remembered by students. They preferred to have one account to access all Web 2.0 tools. A system that offers all tools in a single account is recommended for use in future classes.

Outcomes of Using Web 2.0 Tools in the Classroom

Web 2.0 tools allowed teachers to be more efficient in establishing a collaborative environment than what was originally possible in their traditional classrooms. The record keeping features of Web 2.0 tools allowed teachers to accurately track interaction and collaboration of each student. This was never possible in traditional classrooms as it is difficult to track discussions while supervising in-class activities. Teachers were able to control deadlines and kept students on track. The virtual space created by Web 2.0 tools allowed teachers to extend the capacities of their classrooms and create opportunities for deeper analysis of topics being studied in class. It also allowed for differentiation of instruction and helped teachers implement an environmentally conscious environment by using fewer paper trails.

With Web 2.0 tools, teachers reported achieving exceptional levels of student engagement. The ease of use and the online nature of these tools allowed all students to interact with almost everyone in the class. This interaction was never possible in regular class sessions due to the lack of time. Teachers also reported fulfilling multiple goals including an increase in language learning, general literacy, student engagement, and organizational skills. One teacher said that she will implement blogs, wikis, RSS feeds and podcasts in all of her future classes.

Students learned from each other and developed their commentary skills by commenting on each others' blogs. In addition, student contributions on wikis and blogs created a set of collaboratively created notes that students found very useful for reviewing for their English exams. Podcasts in an educational setting were new to students. Students are used to podcasts that are used for entertainment purposes. They enjoyed listening to poetry recitals posted by the teacher. Students were able to listen to the poetry, analyze it, and post their comments on their teacher's MyPodcast page. Students responded to audio prompts in a way that is similar to blogs. Sometimes, podcasts were time consuming to download and listen to. RSS feeds helped students and teachers organize their Web 2.0 experience by tracking interaction on blogs, collaborations on wikis, and audio recordings on podcasts. RSS feeds allowed students to have access to various services with dynamic content like "English Word of the Day," weather, news, and sports.

Student Motivation Toward Learning English

As expected by Richardson (2006), most students enjoyed their experience and were positively motivated toward learning English. According to students, Web 2.0 tools

allowed them to experience a new, modern, and more interactive way of learning. Students enjoyed a collaborative environment in which they were able to share thoughts and ideas and get more feedback from classmates. With Web 2.0 tools, students became more efficient and productive. They were able to develop their critical thinking skills as they needed to collaborate on projects, build on the thoughts of others, and comment on posts. Students were guided to follow strict and clear deadlines that were published on the teacher's blog. This organized environment kept students on track, focused, and organized. It also gave students more freedom in developing responses and going deeper in analyzing the studied topics. According to students, the English class became more interesting, more fun, and much easier than before.

Professional Development

Once mastered, Web 2.0 tools were not difficult for teachers to implement. Blogs and wikis were the easiest. Podcasts and RSS feeds were more difficult. Only a few students found difficulties in using them. Teachers need to be trained before they start using Web 2.0 activities in their classes. Students can benefit from initial training at the start of each activity. A few students needed help at the beginning. They received help from their peers and were able to continue with the activities on their own. Peer support is very helpful in online learning environments (Bender, 2003). According to Jonassen et al. (2008), teacher training is essential for the successful integration of technology in teaching.

Virtual Worlds and Cloud Computing

New technologies have started surfacing in today's virtual world. The recent rise of cloud computing by introducing online operating systems, like Xcerion, highlights a

virtual future that is built on communication and user participation (Xcerion, 2008). Many of today's students have moved beyond blogs, wikis, podcasts, RSS and social networking and have invested in virtual worlds, a new form of Web 2.0 applications. According to Mayer-Schoenberger and Crowley (2005) virtual worlds like Second Life, Cyberpark, Active Worlds and Entropia Universe allowed developers to integrate Web 2.0-based scripting languages to create new virtual objects, properties, spaces, and businesses while keeping intellectual property rights in virtual worlds. Vickery and Wunsch-Vincent (2007) explain that in January 2007, over 2.5 million users, also called residents, in over 90 countries have created their own virtual worlds in Second Life. In such worlds, residents can own property, host events, build and display virtual creations, and even offer university courses. The Linden Dollar is the virtual currency used, and residents can make money by selling their digital creations and properties. It is expected that more investment will take place in such virtual worlds and, with time, established universities may find that virtual worlds are convenient places to offer authentic online courses especially designed for virtual residents.

Implications

Blogs, wikis, and podcasts were used in an educational setting in which students were required to participate and respond to teachers' prompts. Students' early experiences of using blogs were mostly in social settings. Requiring user participation is important to enhance learning (Smaldino, et al., 2008; Gagné, 1985). The level of participation and quality of contributions increased when posting and commenting on student posts was required and graded. Requiring user participation also led to higher levels of motivation toward learning English. Most students suggested using Web 2.0 in

most other subjects. Therefore, requiring student participation and grading their contributions are important factors to improve learning and achieve a higher level of collaboration (Downes, 2004).

Blogs

Blogs have triggered online discussions among many of the participating students. According to Bender (2003), when used for teaching purposes, online discussions lead to enhanced student learning. Teachers report that blogs helped students share ideas and opinions on the topics being studied in class and have improved learning in the English classroom, therefore, teachers will need to invest more in implementing blogs in their teaching of English. Students recommend that blogs be used in various school subjects, especially subjects that require sharing of information and opinions. According to Hendron (2008), blogs provide students with the social collaborative edge that they can never experience on paper and in traditional classrooms. Schools may use blogs throughout the curriculum to benefit from the interactive capability of this technology. Learning management systems may use blogs as additional modules to extend the capabilities of information sharing. In addition to sharing ideas on discussion boards, blogs may serve as personalized spaces for students to write their own thoughts and experiences in an organized way. According to teachers' reports, blogs allowed more efficient student to student interaction than what is traditionally possible to achieve in a regular face-to-face classroom. Posting reflections, thoughts, comments, and ideas formalized the process of contribution and increased the level of collaboration in the English classroom. Both participating teachers reported that blogging will be regularly implemented in their teaching. It provided an organized paperless track of all student

discussions. Based on these findings, blogs may become a necessary tool to be used in language teaching. Schools may need to implement their own blogging engines to provide a safe environment for their students and teachers and to avoid using free environments like blogger.com that are sometimes hard to manage. Schools upgrading their content management systems, intranets, and learning management systems might want to consider new systems that incorporate blogging modules because teachers will be requesting such tools in order to use them with their students.

Wikis

Based on teachers' reports, the use of wikis is effective for group projects. In a wiki, students are given the chance to build on each others' ideas and experiences to construct a coherent piece of writing that combines the collective knowledge of all members of the group. According to Richardson (2006) wikis offer a chance for students to learn from one another and cooperate to achieve a common goal. In this way, wikis are useful tools for cooperative learning, social learning, and project-based learning. According to Mader (2008), wikis are at the center of collaborative construction of information on the Web. He even considers wikis as the most significant Web 2.0 tool since the introduction of the web browser. Mader explains that wikis have become integral in collaborative writing projects through which books, similar to his *wikipatterns* book, can be created. Contributed chapters can be shared on a wiki designed for a book that is being written. Publishing personnel, editors, and reviewers have direct access to the book as it is being written. Mader suggests that wikis can be embedded in various ways in most applications to enable collaborative construction of information. They can be used on the school level as additional modules in Learning Management Systems

(LMS) like WebCT and BlackBoard. Including wikis as part of an LMS will allow teachers to embed wikis in their lessons. Mader explains further that *enterprise wikis* can be adopted to enable collaborative sharing of information among community users. For example, enterprise wikis can be used on school intranets for teachers and staff to write curriculum standards, teaching units, and shared activities. Security and access permissions are major issues that need to be considered when wikis are used according to Vickery and Wunsch-Vincent (2007). Institutions adopting wikis on a large scale need to have well established security standards and Acceptable Use Policies (Hendron, 2008).

Podcasts

Podcasting requires planning, rehearsing, recording, editing, reviewing, possible re-recording and re-editing, and finally publishing the recorded audio file (Fontichiaro, 2008). Planning requires researching, preparing written notes, and rehearsing in order to achieve good results. Both teachers reported limited use of podcasts. The process explained above can be difficult to follow knowing the busy schedules of school teachers. It is understood that such a process requires dedicated time and effort. Blogs and wikis were easier to construct. In addition to the process of creating a podcast, students are required to have fast access to the Web in order to retrieve the audio recordings and sometimes this access is not possible for all students. Blogs, wikis, and RSS feeds are text-based and do not require a fast connection to be accessed properly. Blogging, in specific, has become possible to be done from regular cell phones using Short Text Messages (SMS). Faster connectivity is needed for teachers to upload recorded files and for students to download them. Another implication is that teachers need to be trained properly on how to create and publish an appropriate podcast. According to Fontichiaro,

although some teachers are challenged when creating audio recordings, free software like GarageBand for Mac and Audacity for Windows and Mac are full featured audio recording applications that make it possible for teachers to easily experiment and create their own recordings. New web applets are needed to directly record audio to web servers in order to ease the recording process and make it easier to edit and publish recordings. Such applets will need faster Internet connections and more powerful web servers. Podcasting in general can become easier when sharing multimedia applications on the web becomes more developed.

RSS Feeds

Teachers and students reported that RSS feeds were very useful for getting news feeds, English word of the day, and notifications of new podcasts, blog posts, and wiki edits. In agreement with Hendron (2008), teachers reported that RSS feeds of their students' blogs, put together on their iGoogle page, helped them stay organized while keeping up with the influx of information coming from all student posts. Hendron explains that RSS feeds offer a great value to educators and their students. RSS is the link between blogs, wikis, and podcasts and their readers. Since RSS feeds are based on XML, it is expected that further development of this language will take place. Learning management systems, content management systems, content delivery systems and all other information systems that may embed blogs, wikis, and podcasts will have to support XML for an effective exchange of data objects.

Professional Development

Teachers and students needed to go thorough a learning curve in order to master the use of Web 2.0 tools including blogs, wikis, podcasts, and RSS feeds. It was promising to see that certain students needed help only to get started and then managed to continue on their own with no problems. Today's students are very comfortable with technology. It is essential that instructors become more comfortable with technology to recognize the value of integrating it into their teaching. Teachers received training on the use of Web 2.0 tools at the beginning of the implementation in class. According to Richardson (2006), teachers need to be provided with more professional development opportunities to explore the usefulness of these tools and define ways to integrate them in their curriculum units. Teachers expressed a need to experiment more with Web 2.0 tools over time in order to reveal many of their potential applications in the English classroom.

Recommendations

The analysis of the findings highlighted several recommendations for educators and researchers to improve the implementation of Web 2.0 tools in the English classroom.

1 The interactive nature of blogs allowed students to share their responses with all classmates. Any classmate could comment and react to the posts. Cross interactions could lead to discussions and more posts. Blogs allowed a very large number of students to interact with one another in a way that was never possible in traditional teaching methods. Writings that used to be addressed to the teacher are now addressed to everyone. This flexibility gave the opportunity to all students to express themselves creatively on their blogs.

Teachers have realized the great benefit for student learning when using blogs instead of paper-based journal writing. It is therefore recommended to use blogs for electronic-based journal writing activities in the English classroom.

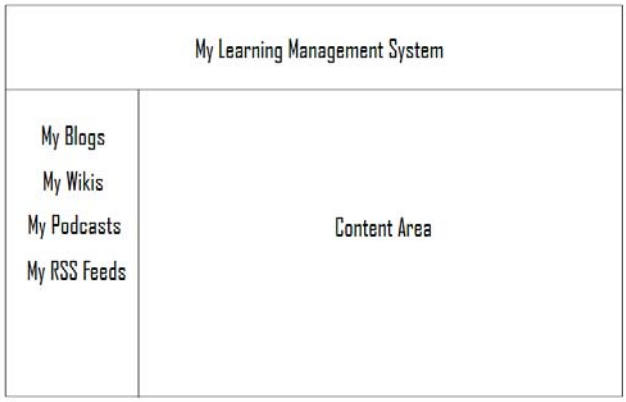
2 Most students recommended the use of Web 2.0 tools in all other subjects. Teachers can benefit from the interactive nature of blogs and the collaborative use of wikis for group work. They can publish their lectures, readings, and announcements using podcasts, and can benefit from the information tracking capabilities of RSS feeds. It is recommended that more studies need to be done to confirm the usefulness of Web 2.0 in all subjects.

3 Most current Web 2.0 tools are disconnected from each other and are offered for free from various companies including Google Blogger, Wikispaces, Mypodcast, and many others. Based on the educational value that these applications offer to educators at various levels, it is recommended to develop systems that support these applications through one interface and one login account. Google, for example, currently offers blogging and RSS tools. It is recommended that podcasts and wikis be added to unify user log in.

4 It is recommended to develop Learning Management Systems that offer Web 2.0 tools in one integrated interface. Figure 8 shows new suggested buttons for Web 2.0 tools to be added to future versions of learning management systems. New versions of Learning Management Systems like Sakai and Moodle have recently started implementing Web 2.0 tools in their interface.

Figure 8

Suggested Web 2.0 Modules in Learning Management Systems



5 Participating teachers were interested in networking and sharing ideas with other English teachers about the use of Web 2.0 in the curriculum. Teachers can support each others and learn from each others' experiences and benefit from exploring more ways of implementing Web 2.0 into their teaching. It is recommended that teachers establish links with other teachers to share experiences and set best practices.

6 Students who faced technical difficulties were helped by their classmates and managed to complete all activities on time. Customized training for specific students with difficulties in using technology could remedy this issue. It is recommended that introductory tutorials be offered to such students prior to the implementation of Web 2.0 tools in the classroom.

7 Other than tracking students' blogs and wikis, and adding feeds like word of the day, weather, news, and email, there are limited curriculum-based resources that are directly related to teaching and learning. It is recommended to develop customized content created for students and teachers based on

curriculum standards. Most of the RSS feeds currently available are designed for news and special interests and do not offer content that is of considerable value for teaching and learning.

8 Web 2.0 tools are many and come from various providers. Teachers needed to share a lot of links with all students at various stages of the implementation phase. In the absence of a learning management system, it is recommended that a web page be created to share links to the needed Web 2.0 tools.

Summary

Today's students have access to global, interactive, and multimedia rich electronic resources. They are the "Net Generation" (McNeely, 2005). These students rarely had the opportunity to experience the latest in interactive web technologies in a teaching and learning context (Oblinger & Oblinger, 2005; Warlick, 2005a; Richardson, 2006; Losinski, 2007). The current teaching practices lack the interactive technologies that engage today's students and allow them to be active contributors in collaborative activities. Current Web 2.0 technologies, including blogs, wikis, podcasts, and RSS have created a *Read/Write* web that is ideal for student collaboration. The goal was to examine how Web 2.0, including blogs, wikis, RSS, and podcasts, can change teaching practices of in-service high school teachers to improve the collaboration of today's students in the English language classroom. Two months were needed to implement these tools in a full teaching unit. Two grade 11 English classes with a total of 37 students and 2 experienced teachers were involved. Teachers received training sessions over one week in which they

explored the technicalities of using blogs, wikis, podcasts, and RSS in their classes. Teachers filled three questionnaires: at the beginning (Appendix C), during the implementation phase (Appendix D), and post the implementation phase (Appendix E). Students filled one questionnaire (Appendix H) after the implementation phase was completed. The findings are presented in a descriptive narrative format.

Teachers found that Web 2.0 tools made them *more efficient* and *paperless*. Blogging was the *most powerful tool* for expressing and sharing ideas. Blogs formalized interaction through a published format. Teachers developed questions and students posted their responses on their own blogs. Students read each others' blogs and posted comments. This act triggered more interactions and cross posting of poetry, academic responses, and personal opinions. Students were never provided with a similar opportunity in a regular classroom that used conventional methods of teaching and learning. Students were actively interacting and sharing thoughts and ideas. Students were very interested in seeing what others think of their writing. Some students decorated their posts with graphics and added on their blogs news links, slideshows, and personal profiles. Both teachers and students enjoyed the interactions that took place on blogs.

Wikis were more difficult to use but were useful to facilitate group planning and the collaborative construction of knowledge. Wikis provided a collaboration environment in which students were assigned to small groups and were asked to edit wikis in order to construct a collaborative response to prompts of their teachers. The result was that students had a chance to collaboratively construct knowledge with their classmates. Students learned a lot from each other and completed group projects. Podcasts are more technical than wikis and required a high bandwidth. They were useful for creating

interviews, speeches, and poetry recitals. Students enjoyed listening to the podcasts and some students created their own podcasts for the school magazine. Tracking updates on websites, posts on blogs, collaborations on wikis, and audio recordings on podcasts was made possible with RSS feeds. They helped students and teachers organize their Web 2.0 experience by adding feeds on their iGoogle page. RSS feeds allowed students to have access to various sites that offer dynamic content including weather, news, and sports.

Teachers considered Web 2.0 tools "extremely useful" and of "great potential" for teaching and learning in the English classroom. This project was an eye opener for teachers who will be exploring more uses of Web 2.0 tools in their classes. Students were naturally engaged when working with Web 2.0 tools. They were described by their teachers as "a generation of online learners". All students needed to experiment with these tools and have a chance to learn about new technologies used in teaching and learning. Web 2.0 tools were useful for sharing ideas and connecting to the world. This case study offered a professional development opportunity for teachers through which they learned about applications that promote better student learning.

Appendix A

Institutional Review Board Approval

NOVA SOUTHEASTERN UNIVERSITY
Office of Grants and Contracts
Institutional Review Board

MEMORANDUM

To: Mahmud Shihab

From: James Cannady, Ph.D.
Institutional Review Board

Signature

Date: January 15, 2007

Re: *Web 2.0 Tools Improve Teaching and Collaboration in High School English Language Classes*

IRB Approval Number: cannady01150801

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms these must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE REACTIONS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and 954-262-2085 respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Protocol File

3301 College Avenue • Fort Lauderdale, FL 33314-7796 • (954) 262-5369
Fax: (954) 262-3977 • Email: *inga@nsu.nova.edu* • Web site: www.nova.edu/cwis/ogc

Appendix B

Permission to Conduct the Study at the Secondary School
of International College, Beirut, Lebanon

From: Youssef Korfali <ykorfali@ic.edu.lb>
Sent: Friday, November 16, 2007
To: Mahmud Shihab <mshihab@ic.edu.lb>
Subject: RE: Requesting your permission to conduct my doctoral research at the IC secondary school

Hi Mahmud,

You have my permission to conduct the study at the Secondary School.
Make all necessary arrangements with the English teachers.

Good luck and keep me posted

Youssef Korfali
Director of the Secondary School
International College

From: Mahmud Shihab <mshihab@ic.edu.lb>
Sent: Friday, November 16, 2007
To: Youssef Korfali <ykorfali@ic.edu.lb> – Director of the Secondary School
Subject: Requesting your permission to conduct my doctoral research at the IC secondary school

Dear Mr. Korfali,

My doctoral research is based on new innovative Web 2.0 technologies including blogs, wikis, and podcasts that are becoming increasingly used by teachers and students. Early research has shown that there is great potential for these technologies to improve student interaction and collaboration as well as attitude toward learning. Today's students are very familiar with the Internet and have established themselves on many social networking and other interactive sites. The goal of this study is to examine how blogs, wikis, RSS, and podcasts, can change teaching practices of in-service high school

teachers to improve the collaboration of today's students in the English language classroom.

The study will include the following:

1- Working with two English language teachers on volunteer basis.
2- Meeting with the participating teachers and introducing them to the Web 2.0 technologies.
3- Training the teachers to develop Web 2.0 activities for a unit they normally teach in their assigned curriculum.
4- Observing teachers in their regular teaching sessions.
5- Observing teachers and students while using Web 2.0 activities.
6- Interviewing participating teachers and selected students.

All activities will be planned with the teachers using the units they have in their syllabus. No changes in curriculum will take place. Teaching practices will be modified to accommodate Web 2.0 based activities in the English classroom..

If the results turn out to be as good as expected, blogs wikis and podcasts will be introduced to all other subjects in order to expose to them the benefits of using such emerging technologies to vary the methods of instruction, improve communication between students, enhance collaboration on projects, and motivate students toward learning.

I am available to show examples of these Web 2.0 tools if needed.

I hope you grant me permission to work on this study at the secondary school.

Thankfully,
Mahmud Shihab.

November 16, 2007

Appendix C

Teacher Interview 1 (TI1)
at the Beginning of the Study

I. Teacher Information

1. Name: _____

2. Gender: ☐ Male ☐ Female

3. Years of teaching experience: _____

4. Highest Degree Earned: ☐ BA/BS ☐ MA/MS ☐ Educ. Specialist ☐ Ph.D./Ed.D.
☐ Professional Diploma ☐ Other _____

5. Class: _____ Grade Level: _____

6. Enrollment of your class by gender: (give number) _____ girls _____ boys

II. Computer Use by Teachers

1- Are you comfortable in using the computer in your teaching?
☐ Yes ☐ No

2. How often do you use computers in your teaching?
☐ Rarely ☐ Once a week ☐ A few times a week ☐ Daily

3- Describe how you use the computer in your teaching. (check all that apply)
☐ Lesson and test preparation
☐ Research / locating resources
☐ Participating in online forums for teachers
☐ Creating web-based activities (WebQuests, hotlists, treasure hunts, etc.)
☐ Create Web 2.0 activities (Blogs, wikis, podcasts, RSS, etc.)
☐ Other. Please explain: _____

_____

_____

_____

4- List all computer applications that you use most often for your school work

_____

_____

_____

III. Computer Use by Students

1- Do your students have access to computers at school?
☐ Yes ☐ No

2- Are your students comfortable in using the computer?
☐ Yes ☐ No

3- How do you describe the computer/Internet skills of your students?

_____

_____

_____

IV. Teaching and Assessment Practices

1- Describe your teaching methods and practices that you use in your English class.

_____

_____

_____

_____

2- Describe how students collaborate on class activities?

_____

_____

_____

_____

_____

_____

2- Describe how you assess your students in your English class.

_____

_____

_____

_____

_____

_____

V- Professional Development

1. What areas of computer-related professional development are you considering for the future?

_____

_____

_____

_____

2- What do you know about Web 2.0 (Blogs, wikis, podcasts, RSS, etc)? How is it being applied in education?

_____

_____

_____

_____

3- Have you previously experimented with Web 2.0 tools? Which tool(s) helped you improve your teaching practices?

_____

_____

_____

_____

VI- Comments

Please provide comments you believe will help in understanding your teaching practices and the level of student collaboration in your class.

_____

_____

_____

_____

Thank you for your time.

Appendix D

Teacher Interview 2 (TI2)
During the Implementation Phase

Name: _____

Class: _____

Date: _____

The code of the related Research Question was added at the end of each question.

1. Do you think you adequately prepared to use Web 2.0 in your teaching? Why/Why not? (RQ4)

   _____

   _____

   _____

2. Were the Web 2.0 tools (Blogger, Wikispaces, Mypodcast, and RSS) adequate for teaching your classes? What else was needed in the introductory stage? (RQ1, RQ2, & RQ8)

   _____

   _____

   _____

   _____

   _____

   _____

3. Are you facing any technical difficulties while implementing Web 2.0 in your classes? What have you done to overcome them? (RQ4)

   _____

   _____

_____

_____

_____

4. What difficulties, if any, are your students experiencing with the use of Web 2.0 tools? How are you managing them? (RQ1. RQ2, & RQ6)

_____

_____

_____

5. What changes are you introducing in your teaching practices as you are implementing Web 2.0 tools? Give sample anecdotes from your classes. (RQ2)

_____

_____

_____

_____

_____

6. At a first glance, is Web 2.0 helping you improve your teaching? Which tools were most effective? How? (RQ7)

_____

_____

_____

7. How do you rate the difficulty level of each of the Web 2.0 tools? (RQ3)
   Blogger: _____

   Wikispaces: _____

   MyPodcast: _____

   RSS: _____

8. What changes have you noticed in students' collaboration as a result of implementing Web 2.0 tools in your teaching practices? (RQ5 & RQ7)

_____

_____

_____

9. How are you assessing students for using Web 2.0 tools? (RQ1 & RQ2)

_____

_____

_____

10. How can you ensure that all students are using the Web 2.0 tools? (RQ7 & RQ4)

_____

_____

_____

11. Do you have any apprehensions toward the use of Web 2.0 in your classroom? What are they mainly due to? Is there a way to overcome such obstacles? (RQ4)

_____

_____

_____

12. What other comments and insights do you have?

_____

_____

_____

Thank you for your time.

Appendix E

Teacher Interview 3 (TI3)
Post the Implementation Phase

Name: _____

Class: _____

Date: _____

The code of the related Research Question was added at the end of each question.

1. What were the pros and cons of using Web 2.0 in your teaching? (RQ1, RQ2, & RQ4)

   _____

   _____

   _____

   _____

   _____

2. How have your teaching practices changed since your implementation of Web 2.0 tools? Give sample anecdotes from your classes. (RQ2)

   _____

   _____

   _____

   _____

3. Would you give up certain traditional teaching practices in favor of certain Web 2.0 tool? Could you please explain? (RQ2 & RQ7)

   _____

   _____

   _____

4. What are the major observable outcomes of student use of Web 2.0? (RQ7)

_____

_____

_____

5. Which of the Web 2.0 tools (i.e., blogs, wikis, podcasts, and RSS) offer greatest opportunities for collaboration among students in your English classroom? (RQ3)

_____

_____

_____

6. Which of the Web 2.0 tools (i.e., blogs, wikis, podcasts, and RSS) offer greatest learning potential for your students? (RQ3)

_____

_____

_____

7. Please comment on how you used each of the tools and describe the usefulness or limitations of each? (RQ3)

_____

_____

_____

Blogger: _____

_____

Wikispaces: _____

_____

MyPodcast: _____

_____

RSS: _____

_____

8. How can you describe student collaboration when using Web 2.0 tools inside and outside of the classroom? (RQ5 & RQ6)

_____

_____

_____

_____

9. Compared to previous lessons that were taught using regular methods, how did students' use of Web 2.0 tools within the classroom affect their attitude toward learning and engagement in class activities? (RQ6)

_____

_____

_____

10. What professional development activities would be most useful to you to enhance your new methods of teaching using Web 2.0? (RQ8)

_____

_____

_____

11. Based on your experience in this study, would you be able to apply Web 2.0 in your future classes? (RQ8)

_____

_____

_____

12. What are the tools that you will definitely use in your future classes and how? Describe best practices for using Web 2.0 in English classes? (RQ3, RQ7, & RQ8)

_____

_____

_____

_____

_____

_____

13. What insights can you give about the integration of Web 2.0 tools in your teaching and its effects on your teaching practices and student collaboration? (RQ1, RQ2, RQ3, RQ4, RQ5, RQ6, RQ7, & RQ8)

14. What other comments and insights do you have?

Thank you for your time.

Appendix F

Teacher Observation Field Notes (TOFN)
During the Implementation Phase

Name: _____

Class: _____

Please use this table to take note of any incident, success story, or observation that require attention during your teaching of the unit using Web 2.0. Make sure to mark the date and if the event occurred online or in-class. Use "B" for a blogs, "W" for a wiki, "P" for a podcast, and "R" for RSS.

Date	**Online/ In-class**	**Web 2.0 Tool** **B** (Blog) **W** (Wiki) **P** (Podcast) **R** (RSS)	**Observation, Remark, or Reflection**

Appendix G

Researcher Observation Field Notes (ROFN)
During the Implementation Phase

Teacher being observed: _____

Class being observed: _____

Please use this table to take note of or observations during the implementation phase. Make sure to mark the date and if the event occurred online or in-class. Use "B" for a blogs, "W" for a wiki, "P" for a podcast, and "R" for RSS.

Date	**Online/ In-class** **Teacher/ Student**	**Web 2.0 Tool B** **B** (Blog) **W** (Wiki) **P** (Podcast) **R** (RSS)	**Observation, Remark, or Reflection** (teaching practices, classroom management, student collaboration, student attitude and engagement, methods of communication, use of Web 2.0 tools in teaching, technical difficulties)

Appendix H

Student Survey (SS)
Post the Implementation Phase

I. Student Information

1. Name: _____

2. Gender: ☐ Male ☐ Female

5. Class: _____ Grade Level: _____

II. Computer Use

1- Are you comfortable in using the computer?
☐ Yes ☐ No

2. How often do you use computers?
☐ Rarely ☐ Once a week ☐ A few times a week ☐ Daily

3- How do you rate your computer/Internet skills?
☐ Excellent ☐ Good ☐ Fair ☐ Poor

4. Describe how you use the computer and the Internet. What are your favorite sites and online activities?

_____

_____

_____

_____

_____

5- Do you have access to computers at school?
☐ Yes ☐ No

6- Do you have access to computers at home?

☐ Yes ☐ No

7- List all computer applications that you use most often for your school work

_____

_____

_____

4- How do you use the computer for school work? (check all that apply)

- ☐ Research / locating Internet resources
- ☐ Communicating with classmates
- ☐ Studying
- ☐ Completing assignments
- ☐ Blogging (Authoring blogs)
- ☐ Reading and commenting on blogs
- ☐ Authoring and sharing podcasts
- ☐ Downloading podcasts
- ☐ Creating/editing wikis
- ☐ Chatting with peers about your lessons
- ☐ Other. Please explain: _____

_____

_____

_____

_____

III. Teaching and Assessment Practices using Web 2.0

The code of the related Research Question was added at the end of each question.

1. Describe changes in teaching practices of your teachers when Web 2.0 tools, including blogs, wikis, podcasts and RSS, were used. (RQ1 & RQ2)

   _____

   _____

   _____

2. Describe how these tools changed the way you collaborate on projects with your classmates in your English class. (RQ5, RQ6, & RQ7)

_____

_____

_____

_____

_____

_____

3. Did your computer skills allow you to use Web 2.0 with no difficulties? (RQ4)

_____

_____

_____

4. Did Web 2.0 help you improve your collaboration with your classmates on class activities? (RQ5 & RQ7)

_____

_____

_____

5. Which tool(s), including blogs, wikis, podcasts and RSS, were most effective? How? Give the points of strength and weakness of each tool. (RQ6 & RQ7)

_____

_____

Blogger: _____

_____

Wikispaces: _____

_____

MyPodcast: _____

_____

RSS: _____

_____

6. How do you rate the difficulty level of each of the Web 2.0 tools? (RQ3)

Blogger	☐ very difficult	☐ not too difficult	☐ easy
Wikispaces	☐ very difficult	☐ not too difficult	☐ easy
MyPodcast	☐ very difficult	☐ not too difficult	☐ easy
RSS	☐ very difficult	☐ not too difficult	☐ easy

7. How can you describe your collaboration level on projects with your classmates using Web 2.0 tools inside and outside of the classroom? Did it increase, decrease, or stayed the same? (RQ5 & RQ7)

   ☐ increased ☐ decreased ☐ stayed the same

8. Do you have any apprehensions toward the use of Web 2.0 in your classroom? What are they mainly due to? Is there a way to overcome such obstacles? (RQ4)

   _____

   _____

   _____

9. How did Web 2.0 tools change the way you viewed your English lessons? (RQ6)

   _____

   _____

   _____

10. Are you looking forward for more English lessons that use Web 2.0? Why/Why not? (RQ6 & RQ8)

    _____

    _____

    _____

11. Do you think Web 2.0 tools can be used to teach other subject? Which ones? (RQ6 & RQ8)

_____

_____

_____

_____

IV- Comments

Please provide comments you believe will help in understanding how teaching practices and student collaboration in the English classroom can be enhanced using Web 2.0.

_____

_____

_____

_____

Thank you for your time.

Appendix I

How to Use RSS (Rich Site Summary)

How to use RSS (Rich Site Summary)

RSS

Most websites are offering summaries of their new posts in the form of **RSS feeds**. RSS Feeds use this logo RSS and they represent an address that most often ends with **.rss** or **.xml**

As an activity, visit your favorite sites and collect the URLs of their **RSS feeds**.
For example:

- Visit your teacher's blog:
  - Ms. Jessome: http://englishib1jessome.blogspot.com
  - Mr. Webster: http://ibengwebster.blogspot.com
- At the bottom of the page there is a link to ***Subscribe to: Posts (Atom)***. This is the link to the **RSS feed** of their blogs. Copy this **URL** and use it later in ***i*Google**.
- For more practice, visit the New York Times site (www.nytimes.com) and scroll down to the **bottom of the page** and click on RSS to see a list of feeds for their various news sections.

***i*Google** is a convenient **RSS** reader. It collects updates from all the sites that you add and thus it saves you the time needed to individually visit the sites and locate updates. Using **RSS** and ***i*Google**, you can track updates on your favorite blogs and other websites.

1- Go to **google.com**
2- Click on ***i*Google**
3- Choose a theme and see your newly created page
4- Sign in to your Google/Gmail account and make ***i*Google** your home page
5- Remove all the unneeded feeds (boxes) that were automatically added by *i*Google
6- Click **Add Stuff** >> (top right of your screen)
7- From the section on the left click **Add feed or gadget** and enter the **URL** of your desired **RSS feed** and click **Add**.

8- To check your feed click again on the iGoogle logo (top left)

iGoogle

Notable sites with high Quality RSS feeds:
CNN: www.cnn.com (go to the bottom of the page and click on RSS to locate the URLs)
Merriam Webster's Word of the Day: http://www.merriam-webster.com/word/index.xml

Appendix J

Screenshot of the Web 2.0 Project Page Hosted on the School Site at http://www.ic.edu.lb/library/web20.htm

International College

About IC | Academics | Library | Alumni | ERC | Torch | Calendar | Webmail | IT Support May 8, 2008

Web 2.0 in the English Classroom

This page will serve as a portal to all needed tools and web addresses for the Web 2.0 project.
Please feel free to contact mshihab@ic.edu.lb if you encounter any technical difficulties or if you have any questions.

Ms. Jessome's Links

Blog: http://englishib1jessome.blogspot.com

Wiki: http://englishib1jessome.wikispaces.com

Podcast: http://ibengwebster.mypodcast.com

RSS Feeds with iGoogle: http://www.google.com/ig

Student Blogs

Initials	Blog URL
NA	http://neibenglish.blogspot.com
AA	http://angelaarnaout.blogspot.com
TBI	http://tbizri91.blogspot.com
TBO	http://whoneedsenglishwhenwehavechicken.blogspot.com
JJR	http://jadjabak.blogspot.com
JJK	http://jadjaber.blogspot.com
RJ	http://ranothinkingenglishblog.blogspot.com
HK	http://khadra91.blogspot.com

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Appendix K

Sample Teacher Blog (Teacher: PW)

IB ENGLISH BLOG AT IC

TUESDAY, APRIL 15, 2008

Byron and his Poetry

Please respond to one of the following prompts on your blogs. As always, write a well-developed paragraph in which you support any opinions with reason and evidence. The blog is due on Monday by 7:30 am, and your two comments are due Tuesday night by midnight.

1. The mock epic poem *Don Juan* is considered by many scholars to be Lord Byron's greatest work. What are your thoughts as to the literary worth of the first two cantos that we have read? Are they good poetry?

2. Many believe that the life of George Gordon, Lord Byron has eclipsed his poetry. Do you agree? Which do you find more interesting and why?

3. Compare the poetry of Lord Byron with the poetry of another famous poet (e.g. Shakespeare's sonnets). How does Byron's poetry rate in comparison? Whose poetry do you prefer and why?

POSTED BY PHILLIP WEBSTER AT 9:35 PM 0 COMMENTS

BLOG ARCHIVE

▼ 2008 (8)

▼ April (2)

Byron and his Poetry

Listening to and Writing Poetry

▶ March (5)

▶ February (1)

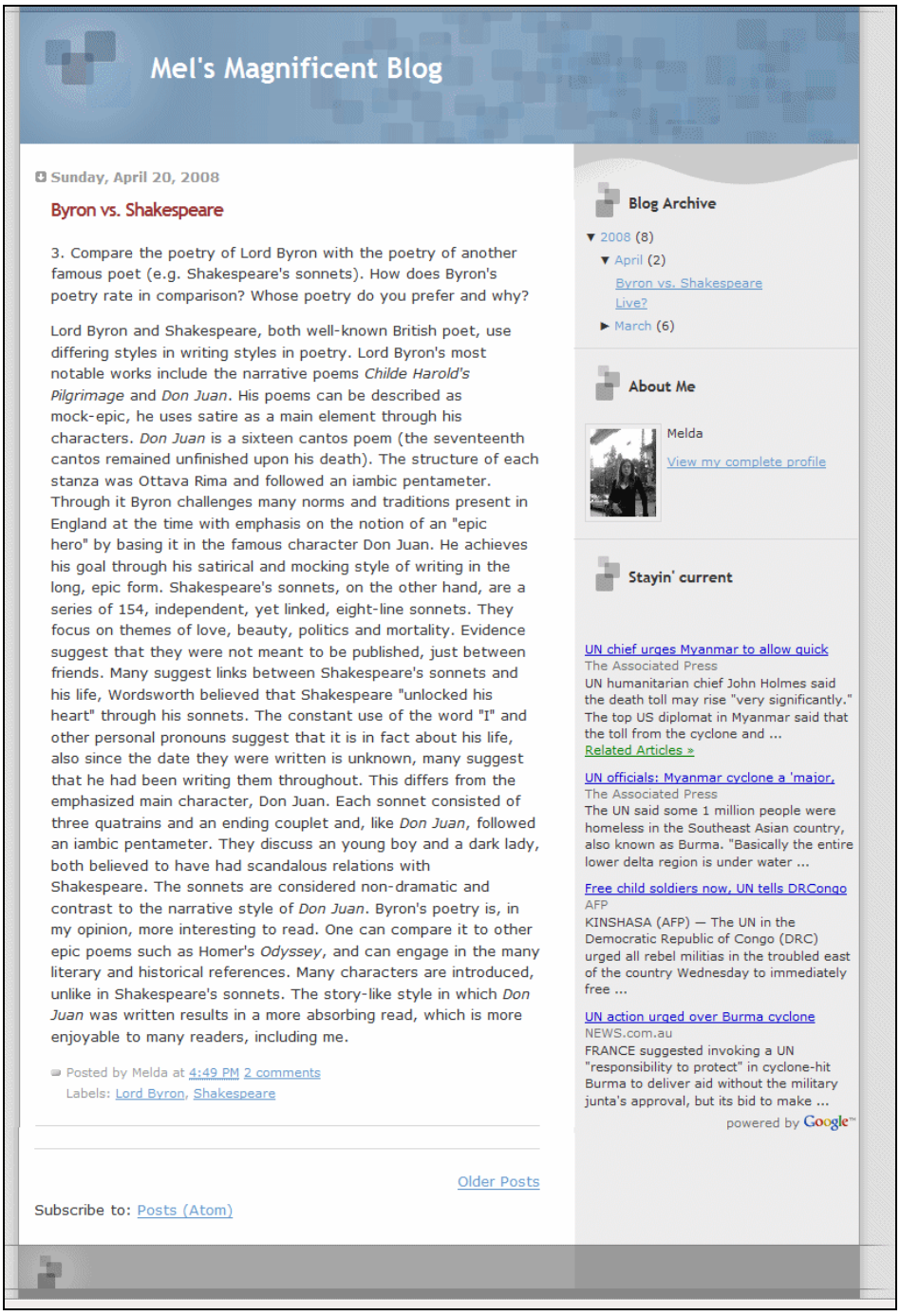
ABOUT ME

PHILLIP WEBSTER

VIEW MY COMPLETE PROFILE

Appendix L

Sample Student Blog (Student: MS)



Mel's Magnificent Blog

Sunday, April 20, 2008

Byron vs. Shakespeare

3. Compare the poetry of Lord Byron with the poetry of another famous poet (e.g. Shakespeare's sonnets). How does Byron's poetry rate in comparison? Whose poetry do you prefer and why?

Lord Byron and Shakespeare, both well-known British poet, use differing styles in writing styles in poetry. Lord Byron's most notable works include the narrative poems *Childe Harold's Pilgrimage* and *Don Juan*. His poems can be described as mock-epic, he uses satire as a main element through his characters. *Don Juan* is a sixteen cantos poem (the seventeenth cantos remained unfinished upon his death). The structure of each stanza was Ottava Rima and followed an iambic pentameter. Through it Byron challenges many norms and traditions present in England at the time with emphasis on the notion of an "epic hero" by basing it in the famous character Don Juan. He achieves his goal through his satirical and mocking style of writing in the long, epic form. Shakespeare's sonnets, on the other hand, are a series of 154, independent, yet linked, eight-line sonnets. They focus on themes of love, beauty, politics and mortality. Evidence suggest that they were not meant to be published, just between friends. Many suggest links between Shakespeare's sonnets and his life, Wordsworth believed that Shakespeare "unlocked his heart" through his sonnets. The constant use of the word "I" and other personal pronouns suggest that it is in fact about his life, also since the date they were written is unknown, many suggest that he had been writing them throughout. This differs from the emphasized main character, Don Juan. Each sonnet consisted of three quatrains and an ending couplet and, like *Don Juan*, followed an iambic pentameter. They discuss an young boy and a dark lady, both believed to have had scandalous relations with Shakespeare. The sonnets are considered non-dramatic and contrast to the narrative style of *Don Juan*. Byron's poetry is, in my opinion, more interesting to read. One can compare it to other epic poems such as Homer's *Odyssey*, and can engage in the many literary and historical references. Many characters are introduced, unlike in Shakespeare's sonnets. The story-like style in which *Don Juan* was written results in a more absorbing read, which is more enjoyable to many readers, including me.

Posted by Melda at 4:49 PM 2 comments
Labels: Lord Byron, Shakespeare

Older Posts

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Blog Archive
▼ 2008 (8)
▼ April (2)
Byron vs. Shakespeare
Live?
► March (6)

About Me
Melda
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The Associated Press
UN humanitarian chief John Holmes said the death toll may rise "very significantly." The top US diplomat in Myanmar said that the toll from the cyclone and ...
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The Associated Press
The UN said some 1 million people were homeless in the Southeast Asian country, also known as Burma. "Basically the entire lower delta region is under water ...

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AFP
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UN action urged over Burma cyclone
NEWS.com.au
FRANCE suggested invoking a UN "responsibility to protect" in cyclone-hit Burma to deliver aid without the military junta's approval, but its bid to make ...

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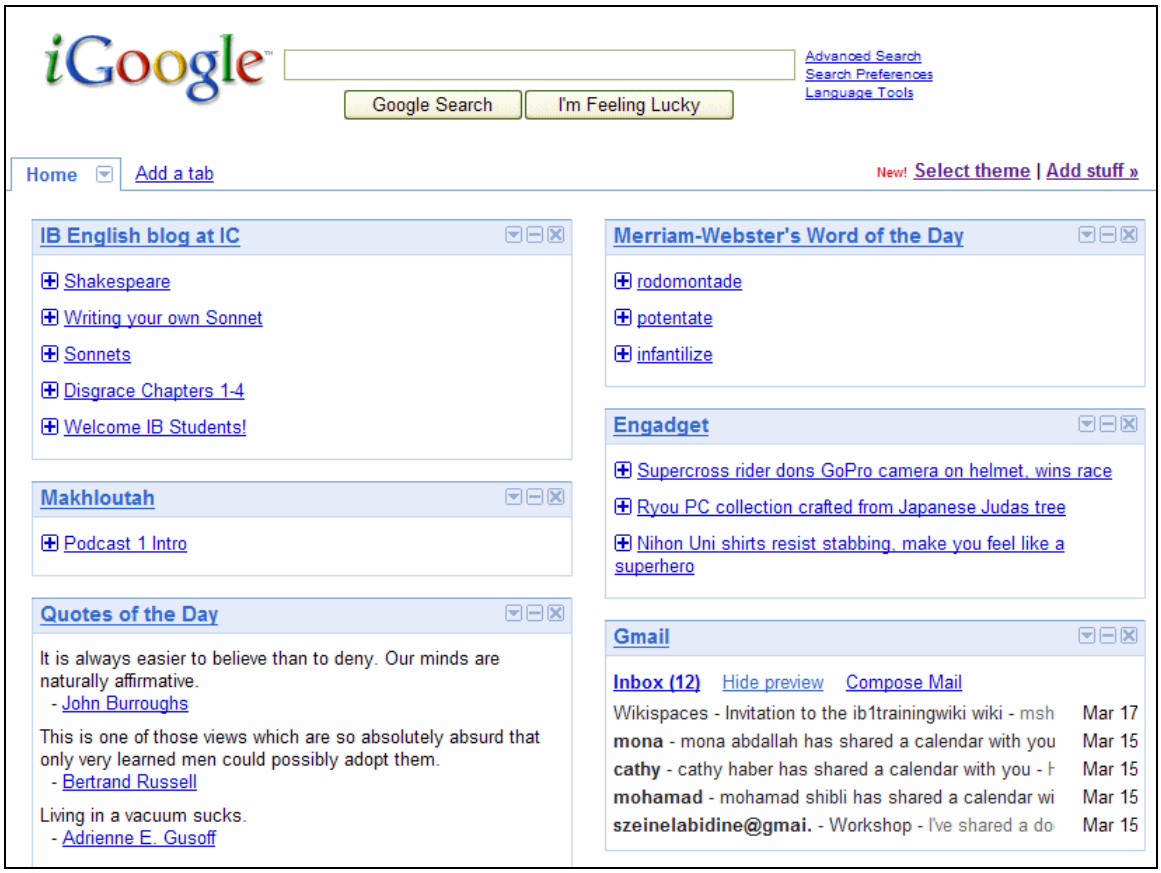
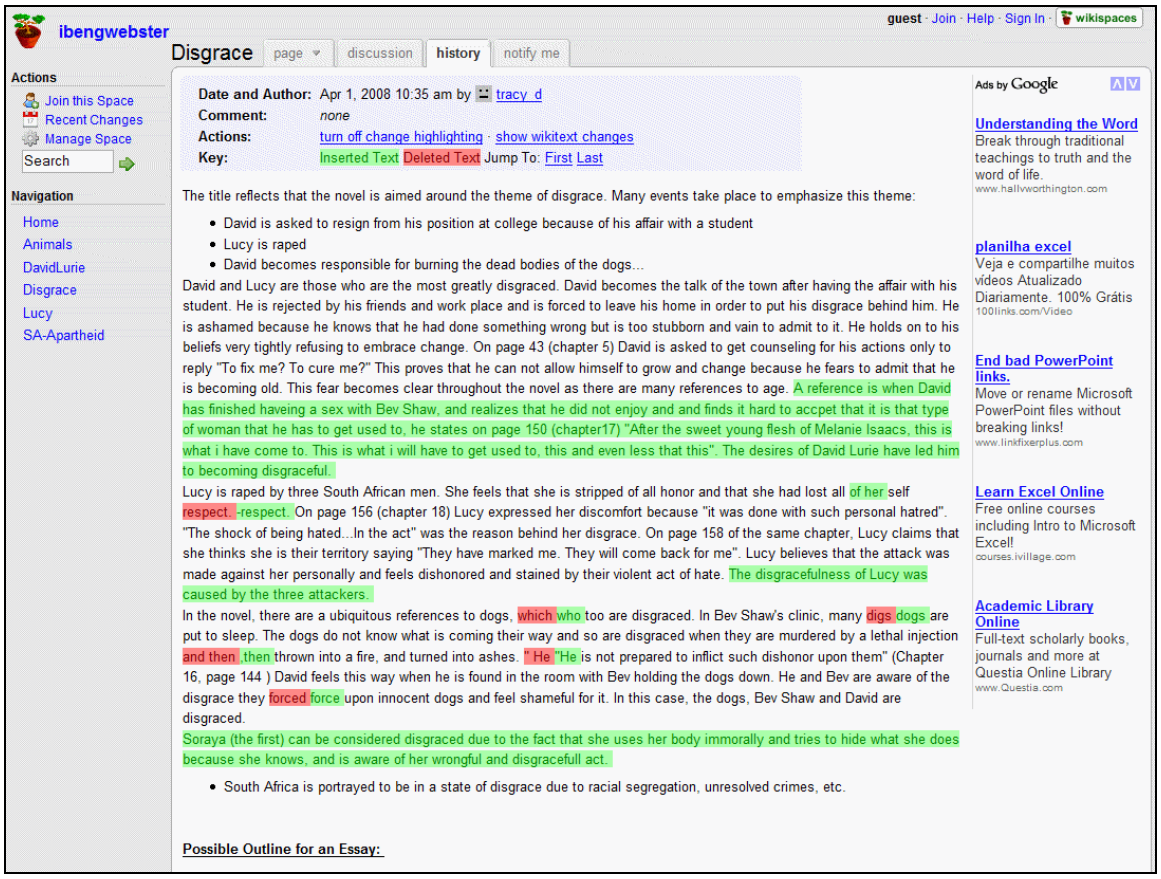
Appendix M

Sample Student iGoogle Page of with Embedded RSS Feeds (Student: ZS)



Appendix N

Sample Edit of a Class Wiki (Teacher: PW, Student: TD)



ibengwebster

guest · Join · Help · Sign In · wikispaces

Disgrace | page | discussion | history | notify me

Actions
- Join this Space
- Recent Changes
- Manage Space

Search

Navigation
- Home
- Animals
- DavidLurie
- Disgrace
- Lucy
- SA-Apartheid

Date and Author: Apr 1, 2008 10:35 am by tracy_d
Comment: *none*
Actions: turn off change highlighting · show wikitext changes
Key: Inserted Text Deleted Text Jump To: First Last

The title reflects that the novel is aimed around the theme of disgrace. Many events take place to emphasize this theme:

- David is asked to resign from his position at college because of his affair with a student
- Lucy is raped
- David becomes responsible for burning the dead bodies of the dogs...

David and Lucy are those who are the most greatly disgraced. David becomes the talk of the town after having the affair with his student. He is rejected by his friends and work place and is forced to leave his home in order to put his disgrace behind him. He is ashamed because he knows that he had done something wrong but is too stubborn and vain to admit to it. He holds on to his beliefs very tightly refusing to embrace change. On page 43 (chapter 5) David is asked to get counseling for his actions only to reply "To fix me? To cure me?" This proves that he can not allow himself to grow and change because he fears to admit that he is becoming old. This fear becomes clear throughout the novel as there are many references to age. A reference is when David has finished haveing a sex with Bev Shaw, and realizes that he did not enjoy and and finds it hard to accpet that it is that type of woman that he has to get used to, he states on page 150 (chapter17) "After the sweet young flesh of Melanie Isaacs, this is what i have come to. This is what i will have to get used to, this and even less that this". The desires of David Lurie have led him to becoming disgraceful.

Lucy is raped by three South African men. She feels that she is stripped of all honor and that she had lost all of her self respect. -respect. On page 156 (chapter 18) Lucy expressed her discomfort because "it was done with such personal hatred". "The shock of being hated...In the act" was the reason behind her disgrace. On page 158 of the same chapter, Lucy claims that she thinks she is their territory saying "They have marked me. They will come back for me". Lucy believes that the attack was made against her personally and feels dishonored and stained by their violent act of hate. The disgracefulness of Lucy was caused by the three attackers.

In the novel, there are a ubiquitous references to dogs, which who too are disgraced. In Bev Shaw's clinic, many digs dogs are put to sleep. The dogs do not know what is coming their way and so are disgraced when they are murdered by a lethal injection and then ,then thrown into a fire, and turned into ashes. " He "He is not prepared to inflict such dishonor upon them" (Chapter 16, page 144) David feels this way when he is found in the room with Bev holding the dogs down. He and Bev are aware of the disgrace they forced force upon innocent dogs and feel shameful for it. In this case, the dogs, Bev Shaw and David are disgraced.

Soraya (the first) can be considered disgraced due to the fact that she uses her body immorally and tries to hide what she does because she knows, and is aware of her wrongful and disgracefull act.

- South Africa is portrayed to be in a state of disgrace due to racial segregation, unresolved crimes, etc.

Possible Outline for an Essay:

Ads by Google

Understanding the Word
Break through traditional teachings to truth and the word of life.
www.hallvworthington.com

planilha excel
Veja e compartilhe muitos vídeos Atualizado Diariamente. 100% Grátis
100links.com/Video

End bad PowerPoint links.
Move or rename Microsoft PowerPoint files without breaking links!
www.linkfixerplus.com

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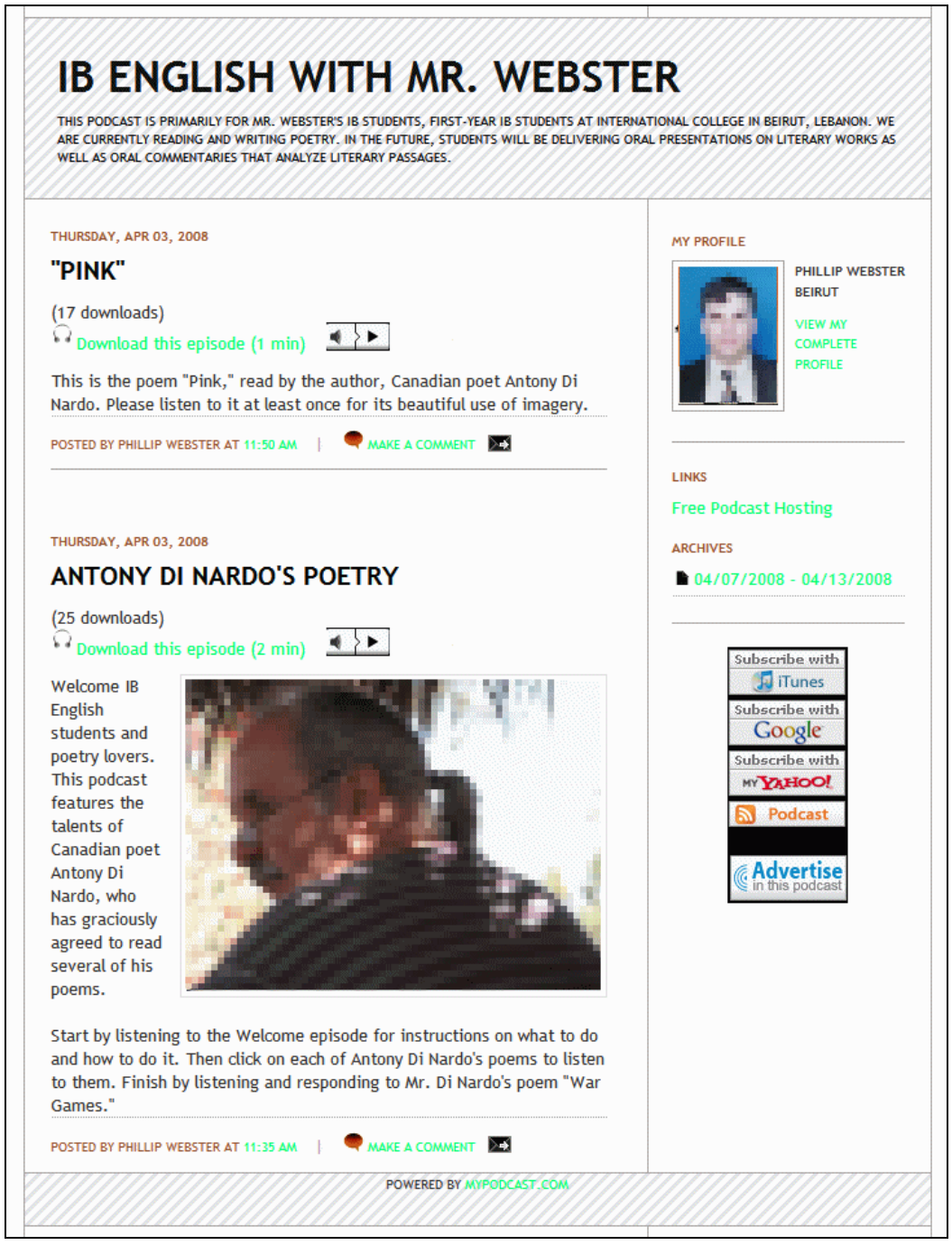
Free online courses including Intro to Microsoft Excel!
courses.ivillage.com

Academic Library Online
Full-text scholarly books, journals and more at Questia Online Library
www.Questia.com

Appendix O

Sample Podcast (Teacher: PW)



IB ENGLISH WITH MR. WEBSTER

THIS PODCAST IS PRIMARILY FOR MR. WEBSTER'S IB STUDENTS, FIRST-YEAR IB STUDENTS AT INTERNATIONAL COLLEGE IN BEIRUT, LEBANON. WE ARE CURRENTLY READING AND WRITING POETRY. IN THE FUTURE, STUDENTS WILL BE DELIVERING ORAL PRESENTATIONS ON LITERARY WORKS AS WELL AS ORAL COMMENTARIES THAT ANALYZE LITERARY PASSAGES.

THURSDAY, APR 03, 2008

"PINK"

(17 downloads)

Download this episode (1 min)

This is the poem "Pink," read by the author, Canadian poet Antony Di Nardo. Please listen to it at least once for its beautiful use of imagery.

POSTED BY PHILLIP WEBSTER AT 11:50 AM | MAKE A COMMENT

THURSDAY, APR 03, 2008

ANTONY DI NARDO'S POETRY

(25 downloads)

Download this episode (2 min)

Welcome IB English students and poetry lovers. This podcast features the talents of Canadian poet Antony Di Nardo, who has graciously agreed to read several of his poems.

Start by listening to the Welcome episode for instructions on what to do and how to do it. Then click on each of Antony Di Nardo's poems to listen to them. Finish by listening and responding to Mr. Di Nardo's poem "War Games."

POSTED BY PHILLIP WEBSTER AT 11:35 AM | MAKE A COMMENT

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Appendix P

Screenshot Summary of Blogs of Section 2 – Teacher: RJ

Student Code	Blog URL	No. of Posts	Type of Posts **A**: Academic **P**: Personal **AP**: Academic and Personal	Blog Features
NA	http://neibenglish.blogspot.com	3	A	images in posts
AA	http://angelaarnaout.blogspot.com	3	A	about me
TBI	http://tbizri91.blogspot.com	2	A	
TBO	http://whoneedsenglishwhenwehavechicken.blogspot.com	3	A	about me
JJK	http://jadjabak.blogspot.com	2	A	
JJR	http://jadjaber.blogspot.com	4	A	
RJ	http://ranothinkingenglishblog.blogspot.com	3	A	photo, about me
HK	http://khadra91.blogspot.com	3	A	images in posts
PK	http://boulos90.blogspot.com	3	A	images in posts
SM	http://sorrymiss.blogspot.com	4	A	
OM	http://omarmatraji.blogspot.com	2	A	
RN	http://ramseysnasso.blogspot.com	2	A	
AO	http://aboudiouayda.blogspot.com	2	A	photo
ZS	http://zibenglish.blogspot.com	5	A	photo, about me, images in posts, News Links
OT	http://omaromaromaromar.blogspot.com	2	A	Favorite Books
NT	http://natalietayim.blogspot.com	16	A	images in posts, about me
AZ	http://alia238.blogspot.com	2	A	images in posts
KZ	http://katerinazakka.blogspot.com	5	A	images in posts
Average		**4**	**A**	

Appendix Q

Summary of Wikis of Section 1 – Teacher: PW

Student Code	No. of Edits	Duration of Edits in Days
HC	1	1
TD	4	1
DM	1	1
AH	2	3
MB	1	1
BA	5	3
DK	4	3
MS	7	13
HI	6	11
DW	3	1
SV	3	1
AK	10	1
HKF	4	1
Mira	4	1
TM	2	2
RZ	4	1
CK	1	1
Average	**4**	**3**

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